

# THE STUDY OF ANGLOPHYSICS

and other stories

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# The Last Temptation of Christ

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Jesus was led by the Spirit into the desert, where he was tempted by the Devil. After various lesser trials and temptations, the Devil led Jesus to the top of an exceedingly high mountain and showed him all the kingdoms of the world. And they stood there together, gazing upon the vista below.

“Behold,” said Satan, mostly to break the awkward silence. “all the kingdoms of the world.”

“They’re very nice,” said Jesus.

Satan’s features — still faintly angelic — formed into a pout. “Really?” he asked. “Because I worked so hard corrupting them and turning them against one another, and...”

“No,” said Jesus. “Not like that. I was just trying to be polite, really. They’re teeming with sin and abomination.”

Satan beamed. Some more awkward silence.

“So,” said Jesus. “Is this the point at which you offer me lordship over all these kingdoms, if I only I bow down and worship you?”

“Nah,” said Satan. “Like I said, they’re kind of crappy. I’m here to tempt you, not insult you. I was planning something more interesting.”

He waved his hand over the panorama, and it *expanded* in a hard-to-describe way. The three-dimensional view became four-dimensional; the vista became a manifold.

“Behold,” said Satan again, “all the kingdoms of the world. Now and forever. Before you, the entire scope of history.”

Jesus hesitated, not really sure what the polite response would be.

“You could at least smile!” said Satan. “Look! These people love you!”

Sure enough, it was true. Many of the kingdoms before them were Christian, building great cathedrals and writing beautiful works of theology in Jesus’

name. Among the remainder, many were Muslim, revering him as one of the greatest of prophets.

“It’s pretty encouraging,” Jesus agreed. “So what’s the catch?”

“Always the catch with you people,” said Satan. “Well, if you insist. Take a look particularly at the psychiatric hospitals.”

Jesus gazed through the manifold, where ten thousand psychiatric hospitals presented themselves simultaneously to his elevated senses.

“As you notice,” said Satan “your popularity has had some fascinating side effects. In particular, a pretty good proportion of psychotics, sometime in their illness, think that they’re *you*. I don’t think either of us wants to sit here counting them all, but could we agree on a hundred thousand as a conservative estimate?”

“A hundred thousand psychotics who believe themselves to be Jesus Christ, across the entire scope of world history,” agreed Jesus. “Sounds reasonable.”

“And it’s a pretty strong delusion,” the Devil went on. “They’d dismiss the contention that they’re not *you* with barely a second thought. Whatever their reasoning processes are, they seem to be bent in on themselves somehow so that they always affirm the conclusion.”

“It’s very sad,” Jesus said. “I hope my Father in Heaven will have mercy upon them.”

“That’s not what we’re here to talk about,” said the Devil. “What I’m really interested in is this — given a randomly chosen person who’s absolutely certain he’s Jesus, what’s the probability that he is, in fact, Jesus?”

“Well,” Jesus answered “There are a hundred thousand psychotics who believe themselves to be Jesus, and only one real Jesus. So by Bayes’ Theorem, we calculate that believing one’s self to be Jesus gives one only about a one in one hundred thousand chance that one is actually Jesus.”

“Your reasoning is impeccable,” said Satan. “So, what is the probability that *you’re* actually Jesus?”

“What?” asked Jesus.

“You are an individual with a certain amount of evidence that you are Jesus. Specifically, you believe yourself to be him. You have various experiences which your reason tells you are consistent with being Jesus, like memories of your mother Mary and so on, but these seem like the sort of thing a damaged intellect could create to support a delusion. You previously determined that a randomly selected person with the belief that he is Jesus has a 1/100,000 chance of being Jesus and a 99,999/100,000 chance of being a psychotic. So, Mr. Person With The Belief That He Is Jesus, do you think those numbers apply to you?”

Jesus thought for a moment. “I’m not a psychotic,” he said. “I think I would know if I were psychotic. I’d have all sorts of symptoms. Hallucinations. Confusion.”

“You know what the number one hallucination reported by psychotic patients is?” Satan asked.

Jesus thought for a moment. “What?”

“The Devil,” said the Devil.

“Oh, that’s just *unfair*,” Jesus told him.

“Usually they report he’s trying to tempt them to do self-destructive things. You know, like jump off tall buildings. Remind me *what we were doing* earlier today?”

“You set that up to confuse me,” said Jesus.

“And you mentioned confusion. Tell me, where are we right now?”

“An exceedingly high mountain,” Jesus answered.

“Which one, exactly? Because the tallest mountain in Israel is a bit under four thousand feet. That’s hardly see-all-the-kingdoms-of-the-world height. Are you even sure what country we’re in right now? And, uh, last time I checked I’m almost certain the world was a sphere. So what *particular* mountain do you think we’re on that allows us to see all the kingdoms of the world?”

“Uh, well, there are no kingdoms in the Western Hemisphere at this point in history...” suggested Jesus.

“Wrong!” said Satan. “Zapotecs and Mochica! You don’t know where you are, you don’t know how you got here, and you don’t know how you’re seeing what you’re seeing.”

“You took me here,” Jesus countered. “I assume you used some sort of devil-magic or something. I didn’t watch where we were going.”

“Oh please,” said Satan. “Outside View! *In general*, when someone says the only reason they don’t know what country they’re in is because the Devil is magically clouding their mind, does that make them *more* or *less* likely to be mentally ill?”

“Mrhghn,” grumbled Jesus.

“So let’s recap. You believe yourself to be Jesus. You admit that you have been seeing the Devil, and that he commands you to jump off buildings, a command you resist only with great difficulty. You don’t know where you are or how you got there, and your only weak explanation is that malevolent demons magically transported you there and meddled with your mind so you don’t remember it. Using the Outside View, *what is the probability that you are even remotely sane?*”

“Look,” said Jesus. “Could you just tell me what the temptation is already?”

Satan waved his hand, and a syringe materialized within it. “5 mg haloperidol, IM” he told him.

Jesus looked at the Devil. He looked at the syringe. He looked at All The Kingdoms Of The World. He looked back at the Devil. His brow furrowed in thought. He looked at the syringe again.

Then his eyes shone as the Holy Spirit flowed through him. His indecision vanished. “Your lies have no power over me, demon,” he told his tormentor.

“Please calm down,” said Satan, only now he spoke with the voice of a middle-aged woman. “We’re just trying to help you, Mr. Anderson. Please just hold still and let me give you your medication.”

“Get thee behind me, Satan!” shouted the Christ, and he pushed the Devil off the mountain. Satan screamed as he plummeted, screamed with a woman’s voice, until he vanished from sight in the depths below.



# The Girl Who Poked God with a Stick

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## HOUSE OF MORIMOTO



"THERE ARE A THOUSAND THAT STRIKE AT THE BRANCHES  
OF EVIL FOR EACH ONE HACKING AT THE ROOT ACCOUNT  
OF THE COMPUTER SIMULATING THE UNIVERSE"

*Crest of House Morimoto, granted by God-Emperor Los II in 1795 ASC*

Maria Morimoto's childhood memories are backed up in a data center in an out-of-the-way district of Wave Manifold. They are locked behind a theoretically unbreakable layer of encryption, for which the password is "taatsattboe-feohtraotcstu". She remembers it because it is the first letter of each word in the motto on her family crest, as well as because her brain is a computer made

of exotic matter with a memory capacity trillions of times more than of all the world's silicon computers combined.

If she were really security-conscious, of course, she would use something much stronger. But she likes the thought that a sufficiently smart person could guess her password and see what she was like as a child. She always did have a mischievous streak.

Maria was born in Much Rejoicing, a sanct of ten thousand souls on a platform in the middle of the Straylight Sea. Dante McCallavre had built it centuries ago at a natural weakness in the telluric field that mysteriously limited technological potential. Since then it had paid for itself many times over, as companies and laboratories who hit the telluric barrier in their mainland facilities looked to relocate somewhere more permissive. By the time of Maria's birth a dozen similar facilities had been built in the oceans surrounding Sxiro, some at even more advantageous spots: Discontinuity was rumored to be the most hypotelluric location in the western hemisphere, though of course scientists differed on the exact measurement protocols. But there was always more demand for hypotelluric land than the platforms could supply, and so Much Rejoicing was both fantastically wealthy and crowded beyond anything a mainlander could imagine.

It was not a good place to be a child. There were no playgrounds, no green growing things. Maria spent most of her time studying. Everyone in Much Rejoicing was very smart, an employee at a hi-tech conglomerate or an employee's family members. Maria decided at age four that she was smarter than anyone, and never encountered any evidence that made her change her mind. When she could not study another minute, she would play pranks on the maintenance workers, or sit on the edge of the platform and stare into the deep blue waters below.

A prank gone wrong. A transport tube switched from "stop" to "go". An inspector dunked in the ocean, all drenched and silly-looking as he waved his arms. A rare failure of the automated life preserver system, a waterlogged body drawn from the depths a few days later. A few hours of frantic hacking, covering up her access to the transport system. Maria remembers none of this, though it is all there in the data center.

At age sixteen she decided she would be a biochemist, and became the third-youngest student ever accepted to John Metzler University in the great imperial city of Sxiroheim. The capital was strange to her. She had known in theory of the world off the platforms, but as she stared at the lush parks and wide boulevards she realized she had never understood how big and *empty* the world could be. Every so often she idly wondered what she would fill it all

with, when the time came.

She was there for the great telluric shift that struck the capital during the reign of God-Emperor Grifos. The electric trains were mothballed and replaced by steam engines; the cars and trucks relegated to huge lots in the suburbs and replaced with horses imported from Goldenmoon or Riverrun. During the worst days, the electric light in her room would flicker off, and she would study epigenetics by candlelight.

The priests would leave the Multi-Temple in those days and wander around the city, preaching God's punishment upon the people for their sins. But if the telluric shift was God's punishment, what of the telluric field itself? By what authority did God fix a ceiling beyond which the human race could not progress?

When Maria looks back on her life, she finds this is the first time it crosses her mind, even in idle daydreams, to ask whether it was possible to kill God and steal His power.

When she graduated university she returned to the platforms, picking up a pharmaceutical job on Deep Trouble. The project was ambitious: Amara Pharmaceuticals was working on a cure for death. They were hoping to develop a retrovirus that would introduce a custom-engineered strand of DNA that prevented normal aging, but things kept going wrong. A few people blamed the tellurics, and the project briefly relocated to Discontinuity in hopes of a more favorable result, but they fared no better and eventually moved back to Deep Trouble. It was during the chaos of the second move that Maria accidentally needlesticked herself; pricked herself with a syringe containing experimental materials. She was monitored for a few weeks with no special result, and her superiors assured her there would be no harm in accidentally infecting herself with a virus that didn't work.

Her life settled into a sort of routine. She worked for Amara five years, until they closed the immortality project in disgust, then got a teaching position in Discontinuity for which she was overqualified. She occupied her time learning some of the fields she had previously neglected — history, literature, even some art — and returned to her childhood habit of playing tricks, mostly on her students and lab assistants. Even then, in the years she would remember as the most boring of her life, she kept her mischevious streak.

Those years of boredom ended with a compliment from a sort-of boyfriend she had been dating half-heartedly: "You look amazing for a thirty-two year old." Unlike most of her casual lies, she remembered this one: on a lark, she had claimed to be twenty-nine when they had met three years ago. She was actually forty-three.

Come to think of it, she did look amazing. A few weeks in the lab confirmed her suspicion: she was infected with an active form of the immortality virus. She thought about contacting Amara Pharmaceuticals for exactly zero seconds. Instead she invested most of her savings in very-long-term bonds and downloaded some books on how to get a fake identity. A month later she flew to Goldenmoon, the most hypotelluric you could get without leaving Sxiro, and told them she had lost her birth certificate. An easily bribed village elder later, she had a fancy piece of parchment confirming her completely fictitious identity as a nineteen year old girl. If the infection dated from her needlestick she was biologically twenty-three, but the younger she made herself the longer it would be before she had to repeat the process.

For her second life she chose Pohjankaupunki, a sanct only about a hundred miles off the coast of Iardix. Bored with the idea of another lifetime of biochem, she reinvented herself as a hacker, learning programming and eventually getting a job in C.O.S.A.C.'s cybersecurity division. In her free time, she amused herself by day-trading and by hacking Amara Pharmaceuticals and causing them to lose all their backup data from the immortality drug in an "unavoidable accident". She was going to have *so much fun* and she didn't want some boring stuffy corporation to ruin it with a fortuitous discovery.

Another trip to Goldenmoon; luckily the village elder's son was as corrupt as his father had been. This time she went to Audente, the first city in the world, the place where they had discovered technology. It was even bigger than Sxiroheim, and the tellurics were better, so that on a good day the maglev could bring her anywhere in the city in minutes. She spent this particular lifetime as a courtesan on the even-numbered days and a naval engineer on odd-numbered ones. The incongruity amused her. They say she helped develop the basic design for the *Queen of Night's Repentant Children* for the great admiral Rahanorion-nomai in a single afternoon, then had wild sex with her the next day.

Another trip to Goldenmoon; the village elder's grandson had developed a remarkable case of honesty, forcing her to take an eight mile detour by ox-cart to the village next door. She was now a hundred twenty years old but continued to look twenty-three. She settled in Nafticon but her attempts to become a fighter pilot were cut short by the news — still considered an amusing cosmetic oddity rather than a significant scientific anomaly — that there was a small cadre of men and women in Audente who had apparently been blessed with youthful good looks well into their middle age. Hijacking an Antican genetics lab, Maria confirmed her suspicion: the active immortality virus was sexually transmitted. After considering her options, she went with the most exciting:

she withdrew some of her quickly-growing fortune in long-term bonds, acquired some very specific and highly illegal training from the Atterans, moved back to Audente, and gradually assassinated everyone she had ever slept with. She found it was more interesting than naval engineering and more fun than sex. To put the finishing touch on her security, she bought out Amara Pharmaceuticals, mothballed the entire genetics division, and switched their product line to focus entirely on hair care. To her amusement, profits doubled.

Another trip to Goldenmoon. Although she now realized she was lacking some kind of important morality gene, it might have been some inner loathing, some desire for self-annihilation, that drove her to Brzgrad to study tellurology. Everyone agreed that it was only a superstition that tellurologists always died early and highly irregular deaths. It was just a superstition that occurred independently across every known culture; one so widely believed no insurance company in the world would sell a policy to a tellurologist. And yet Maria flew across the sea to Brzgrad to study with Stjepan Ekarovic, the acknowledged expert in the field, and worked beside him for two years until his death by falling debris during a freak tornado. When none of his other students appeared eager to continue his research, Maria volunteered for the job.

No one knew exactly what the telluric field was. It had existed at least since written history began two thousand years ago in Audente. No one thought it was natural: no natural force could have quite the precision to snipe technology while leaving biological and natural processes completely untouched. And then there was the astoundingly high mortality rate in the tellurological professions, as if it were actively trying to avoid being studied.

But who had built such a thing? Maria was well aware her civilization had not been the first to exist upon the world. There was an archipelago of floating islands in the southern hemisphere; the largest was about two hundred miles across and hung suspended some two miles above the sea. Somebody must have put them there. But it was hard to believe any civilization, even one capable of hanging islands from the sky like pearls from a necklace, could have created the field. Most people said, reasonably enough, that God had done it. Some said the telluric field *was* God.

Maria spent a hundred years in Brzgrad, longest she'd ever stayed in one place. During that period, she made exactly one original discovery, which was that she ruined any telluric experiment she touched. At first she thought it was uncommon clumsiness. Finally she decided it was something more interesting. Her body negated that telluric field. No one else she studied had this effect, and the phenomenon proved totally resistant to study. Her memories record stimulant-fueled weeks of experiments, followed by periods of miserable

withdrawal, cursing God and science alike. When she smashed up a room of priceless equipment in a rage, she gave up and returned to Discontinuity in disgust.

These were the early years of God-Emperor Los II, and they were years of boredom and frustration for Maria. Her studies had been a failure; her murders, which bothered her in waking life not at all, nevertheless darkened her dreams. She began trying to take over the world, almost for lack of any pastime. By now her investments had matured, and with them she bought a crest and noble title, becoming the Countess of Discontinuity. She found the rest of the nobility to be either pompous fools or self-important businessmen, and within a generation she had become a Duchess. Within two, her “daughter and heir” had won a Praetorship. The stories about her relationship with God-Emperor Ari i Ly’Technomaezj Kaukainen are extraordinarily garbled, but it seems beyond doubt that she seduced him (or vice versa?) at least once. But that was the apex of her political career. Something, perhaps having no higher to climb, perhaps some clue she garnered from one of the mystery cults surrounding the God-Emperor, drove her from Sxiroheim. She returned to Discontinuity and began studying tellurology with renewed vigor.

After less than a year, she realized what should have been obvious from the beginning: her equations had failed because she had simply assumed that there was only one telluric field. There were two of them, weakly interacting with each other. The first telluric field perfectly predicted the behavior of technology. The second did... what?

It was around this time she started taking more seriously the old stories of magic and witchcraft. There had always been *legends* — of So-Sara, of Til Iosophrang — but she had always assumed they were just legends. She had always thought, like most Sxirans, that the Gralans’ reports of their own magic just proved they were superstitious and easily deluded. A quick visit to Skoitamashu convinced her otherwise. Their powers were minor, useful only to delight the easily impressed — but they were not trickery.

The first telluric field limited technology. The second telluric field limited magic. The Sxirans had always assumed magic didn’t exist. The evidence said it didn’t exist *now*, at least not outside limited hypodeuterotelluric pockets. The nadir of the first telluric field was Discontinuity. The nadir of the second was... where?

Maria built a new sanct, Full Circle, upon a placid stretch of black water of ill reputation among sailors. There she founded Amara Advanced Projects, bringing together the researchers she had rescued from a life designing hair care products with magic users she recruited from Skoitamashu. There she began

translating the old texts engraved on abalone shells that sometimes washed up on the beaches near Sara-Nyl. And there, for the first time, someone outside the old So-Saran mystery cults discovered technomagic, the practice of building machines that oscillate between technological and magical components at the resonant frequency of the telluric fields. And so it was at Full Circle that Maria Morimoto developed the holy grail: atelluric components that allowed arbitrary levels of technological advancement.

Everyone had always known that subversion of the telluric fields would lead to a technological singularity within a hundred years. Maria did it in sixty. During the second year of the reign of God-Emperor Mors VI, she uploaded her brain to a computer of exotic matter, folded Full Circle into a pocket dimension, and became a goddess.

In retrospect she agrees she may have gone overboard, in those early days of divinity. She always did have a mischievous streak. Turning the God-Emperor into a chicken was hilarious at the time, but when Eluin used it as an excuse to revolt, the entire Sxiran Empire was plunged into half a century of civil war.

Worse, God had done nothing. She had expected that her newfound divinity would, if nothing else, be sufficient to finally get a good view of her enemy, but there was nothing. She started acting ever more outrageously in the hope of provoking some, any response that proved He was there and watching her. She had been sure that creating Cibola would catch His attention, but even the overnight appearance of an entirely new continent had failed to cause any sort of divine action.

So she decided to poke God with a stick and see what happened.

In the twentieth year of the reign of God-Emperor Reynardine II, she hacked into the telluric field. She met no resistance. Her divine technomagic cut through it as if it were warm butter. It fell into her lap. At age three thousand ninety, she held complete power over the telluric field covering the planet. She wondered whether the field's creators abandoned it, just as the flying islands in the south had been abandoned. Or whether God had grown so tired of His responsibility that He was all too happy to hand it over to the first person willing to accept it, whether He was glad to get the field off His hands.

So Maria destroyed the world. Partly it was to see what would happen. Partly it was to provoke some kind of response from God. But mostly it was to see if she could do better, create something where the telluric fields promoted rather than inhibited human potential, something without all the war and suffering and overwhelming *boredom*.

And she failed. Failed completely. Omi Oitherion, her chosen Messiah, went insane a few years into the process and bungled his role. Every time

she tried to intervene, people became dependent on her and blamed her when things went wrong. Every time she didn't intervene, nations died, families died, people died, and they all died cursing her name. Without the telluric field to stop them, various *idiots* started their own singularities and made her expend a constant proportion of her energy fighting off deranged godlings. It became so bad that she consigned Pelagia, her new world, her chosen utopia, to the flames and rebooted the old world from backup copies.

She could almost kiss it. The grim walls of Sxiroheim, the shining towers of Raikoth, even the filth-strewn ziggurats of Kamalshahr. She resolves to be a better goddess from now on, and starts playing a new game. A game of doing the most with the slightest effort. A whisper here, a leaf falling there slightly out of turn. Can she prevent a war? Overthrow a despot? Even with her immense computational power, the challenge is fiendishly difficult. But it pays off; the fumbling disasters of earlier years decrease and eventually disappear. For the first time, she starts feeling almost content. She will have many millennia to fill the empty spaces, one falling sparrow at a time.

Her contentment lasted about a month until she took the obvious next step and started monitoring whispers and leaves and sparrows. Slight but statistically significant anomalies. How many layers of gods were there above her? How old were they? How long had they had to perfect their craft? She started obsessively monitoring the exotic-matter circuitry that forms her brain. Several particles were out of place. As soon as she began monitoring, the deviations disappeared, at least as far as she could observe. But how much was going on beneath the Planck barrier, invisible to her merely divine senses?

Grim determination renewed, she decided she needed *more power*. She left Full Circle for Nelaga, the largest of the flying islands, where she spent fifty years, obsessively trying to puzzle out its secrets. In its hidden heart she found technomagical engines similar to her own but light-years more advanced. At a glance she grasped the outline of their structure. She could not make technomagic like this, not yet. But she had an idea what it could do.

Suspend gravity. Break the Planck barrier. Warp space. Pass the speed of light. Go backward in time. *Go backward in time.*

There inside Nelaga, she started to get a sinking feeling that she knew who created the telluric force, and why. It would explain a lot. Why she negates telluric fields. Why she was the only person the immortality virus could touch. Why she was allowed to study tellurology without incident. Why no one resisted her hostile takeover of the universe. Who keeps meddling with her. Who founded the So-Saran mystery cults. Why the technomagical engines in the flying islands look so similar to her own.



How much of the history of civilization has been her colossal prank on her past self? She would like to think that the universe has been something more than her attempt to drive away boredom, something more than her own private causal loop, but she sees no evidence for this hypothesis. And she always did have that mischievous streak...



# The Story of Emily and Control

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There's an old joke about a statistician who had twins. She baptized one, and kept the other as a control. Laugh all you like. It'll never be funny to me. I know the true story.

Yes, that's right. It's a degenerate form of a true story. One that isn't funny at all. One that directly caused both of the worst experiences of my life. Yes, I knew them. So here's their story. Don't you dare laugh.

I first met Emily and Control in college. I was TAing a philosophy course; Control was one of my students. I noticed the name, of course, but this was California and I'd heard weirder; in any case it wasn't polite to mention such things. She proved a model student: bright, diligent, enthusiastic. Was I in love with her even then? Maybe.

The next semester I found myself living in a new building, and when I went to meet the neighbors I spotted Control two doors down from me. I went over to say hello; she didn't recognize me and after a brief confusion admitted she was not Control, but her sister Emily. The two were clearly identical twins — the same meticulously styled long straw-blond hair, the same beautiful smile — even their styles of clothing were alike.

She invited me to come in and talk, and discussion naturally turned to her sister. Emily told me of her mother, a statistician, and how she had been so delighted with identical twins that she had named one Control, supposedly an obscure Eastern European name but in fact an homage to the identical twins and their role in controlled trials. At the time, I found this anecdote quite amusing. I was a bit into statistics myself, and between discussions of her twin sister and of mathematics I left an hour later feeling like I had made a new friend.

Our social circles intersected more and more over the next few months, and

I found myself coming to admire the twins more and more. They were still only freshmen, but through social graces and strong personalities they managed to climb the social ladder with deceptive ease. It wasn't just socially, either; Control had passed my philosophy course with the highest GPA in the class, and by all accounts her sister was an equally strong student, as impressive at the humanities as the hard sciences. And call me shallow, but it did not escape my attention that they were two of the most attractive young women I'd ever met. They weren't conventionally attractive, exactly, but there was something about their mannerisms and their style that made them stand out.

One day I let my interest get the better of me. I had a chance meeting with Emily at a cafe, and we were chatting about all the usual random topics, and she said something about some clever interpretation of Aristotle that even I hadn't thought of, and I just said, outright "I don't get it. Some people are pretty, some people are smart, some people are likable. But you and your sister are always the best at everything. It's not even fair. What's your secret? Black magic?"

To my surprise, Emily didn't laugh. She actually looked quite serious. "Well, we don't talk about it much," she said. "But since you asked — we just try lots of different things and do what works."

And she proceeded to tell me how from childhood, she and her sister had taken their heritage seriously and started performing randomized controlled trials on themselves. Evidence-based everything. It began when Emily made flashcards to study from and Control thought it was a waste of time. They made a bet: if Emily could get a better score on three consecutive tests, Control would start using flashcards. Three tests later, the evidence was in: Emily did on average four points better. Control started studying off of flashcards. From then on, whenever they had a difficult choice, Emily would try one path, Control would try the other, and after a few months they would compare results.

When they grew older and started getting an interest in boys, they dealt with it the only way they knew how. Emily and Control would go to the same club with different hairstyles, or different fashions, or entirely different acted personalities, and whoever got more invitations to dance would win for the night. Emily cut her hair, Control kept hers long; when Control consistently attracted more interest, Emily grew hers back. And so they conducted experiment after experiment, at school and at clubs and with their friends, growing stronger with each bit of knowledge gained.

It was the best thing I'd ever heard, and I told Emily so. She just laughed and brushed back her hair in a way that had no doubt been perfected over

dozens of unwitting test subjects. I had never wanted an identical twin more than I did in that moment.

I won't bore you with the next year, but by the time my senior year came around, my fondest wish had come true: I asked Control out, and she agreed. We dated with varying levels of seriousness all through the beginning of the year. Emily, for her part, had broken character and was seeing a stereotypical biker from the city: oiled hair, black leather jacket, the whole works. Control and I found this hilarious. We mocked him mercilessly, never where Emily could hear, of course, and compared their tempestuous on-again off-again relationship to the more pleasant and stable thing we had going. We were both so happy that it was totally obvious it couldn't last.

I don't really know why our relationship started to deteriorate, except maybe the same reasons almost everyone's relationships eventually deteriorate. It was college. Maybe we weren't ready yet. But there were more and more fights, and they lasted longer and longer, and eventually after twenty minutes of yelling over the phone I shouted something like "Well, if you dislike me that much, maybe you should have gotten yourself a greasy bad boy biker like your sister!" And then I hung up.

And then I realized, with a sort of oh-my-god-it-was-obvious-all-along insight, that of COURSE she had considered that option. But it wasn't her way just to go for it willy-nilly. Emily and Control had sat down, decided they needed boyfriends, discussed a mutual interest in sketchy leather-jacket wearing motorcyclist types, and then Emily had gone off and found one. And Control, as usual, had sought out a standard for comparison. Someone totally inoffensive and neutral. Me.

I called her up, my hands shaking. "Hello?" she said. I got to the point. "Am I the placebo boyfriend?" I asked her. She hesitated. Right away that told me all that I needed to know.

"So that's all I am to you?" I snarled. "A placebo? A control group for your real boyfriend? Well, experiment is over now. And very successful, by the sound of it. You can't help but do better than the control." I slammed down the phone.

And an hour later, I was treated to a long and desperate-sounding email from Control. The gist of it was that yes, she had been using me, but I had it all wrong. The experiment had gone the opposite way. Emily hated her boyfriend; she was sticking with him only out of a sense that it would be bad experimental practice to end the study prematurely. She and I had had our quarrels, but overall it had been a good time, and she was going to recommend Emily get a boyfriend just like me. She said all the right things, but by that

point I had hardened my heart. I deleted the email and resolved to avoid the sisters from then on.

It proved easier than I thought. Emily and Control, who had once moved through college society with masterful ease, were nowhere to be seen.

I learned why one evening after talking to a mutual friend. Emily had tried to break up with her boyfriend. He hadn't taken it very well. He'd beaten her up, then assaulted her. The hospital said her physical wounds were mostly superficial, but the trauma was harder to heal. I started to hear rumors that she was skipping classes — unthinkable just a few months earlier. Then other rumors, that she'd turned to alcohol. I didn't believe them. She'd been too perfect.

But I ran into her one night at the cafe where we used to hang out. As soon as I saw her, I knew the rumors were true. She looked awful. "Hey," she told me. She didn't sound too good either.

"Control says she's sorry," Emily told me, nursing a beer. "She really did like you."

"I guess I believe that, now," I said. "But what's done is done. You know, I really respected that science thing of yours. Best idea I ever heard. Seriously. But you can't do that kind of thing when there are people on the other side who'll get hurt. It's, you know, unethical."

Emily glared. "You think I didn't get hurt myself?" she asked. "But finding someone to settle down with is the most important thing you can do. And you want me to take it on anecdotal evidence? I thought Brad would be good for me. I proved the hypothesis wrong. And it's damned good I did, or else Control might have hooked up with someone like him too, and things would've been worse. Really, the whole thing's your fault." She spat. "If you hadn't had your little anti-science tantrum, you and Control would still be together, I'd be looking for someone nice like you, and none of this would've happened."

"Emily," I started. I wanted to be mad, but right now I was too worried. "You can still find someone. I know what Brad did to you hurt you bad, but you don't need to do this whole downward spiral thing. Seriously, put away the beer, clean yourself up, and I'll introduce you to some of my friends. You can even make an experiment out of it, if it'll make you happy."

"It's not about what makes me happy," said Emily, "it's about the truth. As for whether I should put away the beer, that remains to be seen." She finished her can. "See you around."

A few weeks later, I saw her again. Control was drinking with her. I hoped it was just a lapse of standards on her part. The alternative — that Control had deliberately stayed sober while Emily drank, that they had compared results,

and that Emily had convinced her sister that alcoholism was the way to go — was really too horrible to contemplate.

Although considering what was to come, the phrase “too horrible to contemplate” really shouldn’t be used so lightly.

It was a few days before graduation. I hadn’t seen either of the twins in a couple of months. I vaguely felt like I should search them out and say some sort of goodbye before I left the university forever, but things kept getting in the way, and I didn’t bother. It was the professor I’d been TAing for who first told me the news.

“You know Emily?” he asked. “The twin sister of that lovely girl Control I had a few years ago? Don’t tell anyone yet, but the faculty just got an email about her. Apparently she killed herself. Overdosed on some pills, don’t know how she got them. Very sad. And everyone said she was such a nice girl, too.”

I was shocked. I really didn’t know what to say. I knew that between her experience with Brad and the alcohol that she’d been in a bad way lately, but I never could have imagined it would come to this. The funeral was the day before graduation. I was there. Control was there too. I don’t think we spoke two words to each other. I was in shock. She was obviously in shock. We listened to the pastor go through his empty ritual — ashes to ashes, dust to dust — and then I returned to school for a decidedly joyless graduation. Control was a year behind me; thank goodness she didn’t have to endure those two ceremonies juxtaposed in quite that way.

After that I left town pretty quickly. I had a job offer a few hundred miles away, so I took that and soon my memories of college were far behind me. I emailed Control once or twice, expressing my condolences, saying how sorry I was that things didn’t work out between us, telling her I was sure she would bounce back. She responded with equal platitudes: she appreciated my concern, she was trying her best. After a little while, even the meaningless formalities of email were abandoned, and we lost touch completely.

It was six months after graduation. I’d heard about a better job offer back in the old college town, so I’d driven down for the weekend to interview. It had gone well, I was fully expecting a call saying I’d got the job, and I stopped off in the old cafe I’d spent so many hours in to get myself some ice cream in celebration.

There at a table in the far corner was Control, intensely focused on something. I went closer; I saw the object of her interest. She was hunched over a Ouija board. She looked up. “Oh!” she said, with a look of surprise. “I didn’t know you’d...”

My blood turned to ice.

It was the simplest possible plan. I should have guessed it months before. For “who would bear the whips and scorns of time, but for the dread of something after death?” And so the experimental and control groups had been randomly assigned, and one of them had entered the great beyond, and the other had stayed in this world of suffering, and God help them they were going to compare results.

So of course I fled as fast as my legs could carry me, and of course I never returned, not even to hear if I’d got the job. And of course I deleted Control’s number from my phone, blocked her email account, blocked her on Messenger, unfriended her on Facebook, cut off all contact with everyone I knew in college where there was even the remotest chance they knew her. Because that was one experimental result I never wanted to hear.

What if the next morning, I had found Control dead? Then I would know with all the certainty of science that it was better to die than to live; that life was empirically and incontrovertibly pointless, that those who passed away were the lucky ones compared to us condemned to remain on Earth.

And if I saw her the next morning, bright and lively as ever? Oh God, how much worse that would be! It would mean scientific proof that no matter how wearisome and unpleasant life become, what awaited us beyond the grave was far, far worse. It would mean living in fear of an eternity whose content was unknown, but whose dreadfulness was incontrovertible. Let others say that “all knowledge is worth having”; I am far happier not knowing.

So if you ever meet a girl with straw-blond hair and a smile to die for, a bright enthusiastic girl with a penchant for statistics, and maybe you are attracted to her and maybe you aren’t, but you think you would like to get to know her better; well, before you ask her name, think for a moment about whether you want to burden of knowledge that will go with it. And if she smiles at you and says her name is Control, and that it’s a funny story, then you are lost, and all I ask is that you never tell me how she’s doing.



# The Logician and the God-Emperor

*Originally posted on December 4, 2013*

<https://slatestarcodex.com/2013/12/04/the-logician-and-the-god-emperor/>

Once upon a time a logician accomplished a great deed, and the God-Emperor offered him a choice of rewards. “You may,” said the God-Emperor “have the hand of my eldest daughter, who is the heir to the throne, yet plain to look upon. Or you may take my youngest daughter, who is beautiful beyond words, but without inheritance.”

The next day, the God-Emperor caught the logician in bed with *both* his daughters. Enraged, he hurled threats and abuse at the scholar, who responded with a grin: “Guess someone never learned the difference between ‘or’ and ‘xor’.”

The God-Emperor ordered the logician brought to the throne room in chains, and told him “You have offended me and betrayed my generosity, so you will be subjected to trial by ordeal. I have placed in front of you seven chests. Six of the chests contain skulls. One of the chests contains the key to your chains. I have asked the most devious minds in my kingdom to prepare a logic puzzle giving hints as to which chest is which. You may open a single chest. If you do not find the chest with the key on your first try, you will be slathered in barbecue sauce and thrown to the wolves.”

The logician approached the chests, and upon each was written a clue in complicated logical notation. He examined all seven, and then stood a while, deep in thought. Finally, he opened the third chest. Inside was a golden key.

“Very impressive!” said the God-Emperor. Then he yelled “Guards! Slather this man in barbecue sauce and throw him to the wolves!”

“But... but!” babbled the terrified logician “...but you said...!”

The God-Emperor grinned. “Guess someone never learned the difference between ‘if’ and ‘iff’.”



# Might Not, Technically, Have Happened

*Originally posted on October 31, 2010*

<http://squid314.livejournal.com/284970.html>

Mr. Murphy sat on his chair and fidgeted nervously. I sat on mine, hidden in the back corner, doing the same.

I was on rotation with Dr. Tophet, who strenuously objected to having a student. The matter had gone back and forth, with the doctor telling administration that he was a very busy man, and administration telling the doctor that everyone was busy, and that this was a teaching hospital, and that it would take at least fifteen minutes' work for them to find anyone else. For a few days it had seemed like an irresistible force encountering an immovable object. But as always, the reluctance of the administration to do work won out, and Dr. Tophet agreed I could shadow him as long as I promised to sit in a corner and say nothing. So there I sat, quiet and fidgeting.

Mr. Murphy was even less at ease. He had come in last Monday with a history of worsening episodes of depression, rage, and confusion. They'd taken some blood and offered to call him in a few days when the test results were in. Instead, he was told to come to Dr. Tophet's office. That could only mean one thing. Good test results were delivered by phone; bad test results were delivered in person, everyone knew that. Things were not looking good for Mr. Murphy.

"Mr. Murphy," said Dr. Tophet, walking into the room. He shook the man's hand. Dr. Tophet was tall, dark, and vaguely foreign-looking, although I didn't know exactly where he was from. He spoke rarely, and with a slight accent. He did not so much as give me a glance before sitting down and taking out the patient's chart.

"Mr. Murphy, have you ever heard of pneumatoma?"

Mr. Murphy shook his head. The diseases with Greek names, the ones you'd never heard of, they were always the worst.

"In layman's terms, Mr. Murphy, you have soul cancer."

The patient blinked. Opened his mouth a little. Closed it. "Soul cancer? What?"

"Stage two pneumatoma," said Dr. Tophet. "A highly advanced, malignant form of soul cancer."

"What? That's crazy!"

"I'm sorry, but the blood tests confirm it. There's no room for doubt. It's pneumatoma."

"You're making that up."

"It's natural to be angry or in denial when you hear difficult news. If you would prefer to have a few days to reflect before we talk further, I can give you another appointment on Tuesday."

"No," said Mr. Murphy. "I'm not saying I don't believe *I* have numo... numa... soul cancer. I just never heard of such a thing. How can a soul get cancer?"

"Almost any part of the body or spirit can develop cancer, Mr. Murphy. You've probably heard of breast cancer, prostate cancer, and lung cancer, but there are hundreds of types only the specialists know about. Angiosarcoma — blood vessel cancer. Osteosarcoma — cancer of bone. Medullablastoma — cancer of embryonic brain remnants. And pneumatoma — cancer of the soul. All very rare. I'm sorry you have to be the one to get it, Mr. Murphy."

"So doctors know about the soul?"

"We would hardly be doing our job if we missed an entire organ. Pneumatology is decades old and on sound scientific footing."

"Soul cancer," he said, testing out the words. "Soul cancer. Bloody hell. Is it dangerous?"

"Very," said Dr. Tophet. "After it reaches a certain size, it will metastasize to other organs and eventually kill you. But don't worry. This is one of the top hospitals for treating soul cancer in the country, and I promise you we won't let you go without a fight."

Mr. Murphy looked utterly miserable.

"What's the treatment?"

"For stage two, I'm afraid I have to recommend a radical pneumatonec-tomy."

"Radical... pneumatonec-tomy?"

"We take out your soul through your nose."

Mr. Murphy literally jumped out of his chair.

"You can... remove the soul... through the nose?"

"It's not so surprising," said Dr. Tophet. "Do you say 'God bless you!' when someone sneezes? It comes from the old belief that a sufficiently powerful sneeze might blow the soul out through the nose, and that a prayer was necessary to make sure God helped it back into its rightful place. Of course, the custom itself is only superstition: a normal sneeze is hundreds of times too weak to actually dispel the soul. But the principle behind it is sound, and with modern surgical technique there should be minimal trauma and no pain."

"But... what happens to me... without my soul?"

Dr. Tophet stood up and went to his bookshelf. He passed by books with titles like *Encyclopedia of Parapsychiatry* and *British Journal of Radiation Ontology* until he came to one entitled *Pneumatotomy — History and Practice*, which he took down, opened to a bookmarked page, and handed to his patient. I couldn't see any of the text, just Mr. Murphy's head, occasionally nodding.

"The soul," declared Dr. Tophet, "is what we call a vestigial organ. It's like the appendix. In the past, it was important for appreciating beautiful music and poetry, communing with the grandeur of nature, experiencing true love, and guiding our moral decisions. But in these days of rap music, nature replaced by endless suburbs, and no-fault divorce? And how many people nowadays do you see reading poetry? Most of my patients get through their pneumatotomy without even noticing the difference. I have one patient who's three years post pneumatotomy and is now head of a major bank."

"What about my morals? Will I become a, you know, a psychopath?"

"Oh no. Most of what you call 'morality' is just following convention, avoiding punishment, worrying what the neighbors will think. The contribution of your actual soul is so minor as to be unnoticeable. You'll be fine."

"And..." Mr. Murphy looked a bit bewildered, a bit out of his depth. A deer in the headlights sort of expression. "And what about, you know, after I die. If I don't have a soul, do I still go to, you know, the afterlife?"

The doctor narrowed his eyes. "Mr. Murphy, I am a busy man. I don't know if you realize the gravity of your condition, but please, try to stay serious."

With a pleading but-what-did-i-do-wrong look in his eyes, Mr. Murphy went silent, totally defeated.

"Tell you what, Mr. Murphy. I'm going to give you the consent form for the operation. You can look it over at your leisure in the waiting room. My medical student will help you out if there is anything you don't understand. When you've finished, you can sign the form and give it to my secretary. Here's a pen, you can return that to my secretary too. Once you've signed the form, we can schedule a date for your operation."

Mr. Murphy nodded.

“Uh, sorry,” I said. “I really don’t know anything about soul cancer. Maybe you should...”

“Then this would be a good time to learn,” said Dr. Tophet. “I am going to work on charts for the rest of the day. I’ll see you tomorrow morning. Mr. Murphy, thank you for your time.”

His tone of voice did not invite question or comment, and without even rising to shake hands he took the book from Mr. Murphy, replacing it on his shelf between *The History and Metaphysical Exam* and an old, decaying book whose title had faded but which was authored by a “Dr. Alhazred“. Then he took a chart from the pile beside his desk and started scrutinizing it.”

“Uh, come with me,” I told Mr. Murphy. “I’ll show you to the waiting room.”

Actually, I wasn’t sure where the waiting room was. I’d never been in this wing of the hospital before. I assumed I could find it, though, an assumption that was immediately proved embarrassingly wrong. I caught sight of a row of signs with relief. One pointed to the waiting room, another to a cafeteria, and another to...

“It says the office of the hospital chaplain is that direction,” said Mr. Murphy. “Do you know him?”

“Never met him,” I say.

“If you don’t mind... do you think Dr. Tophet would mind if I had a talk with him. Because of souls and all?”

“I’m sure he wouldn’t,” I said, though in fact I very much doubted my ability to predict the doctor’s actions and he seemed like the easily offended sort. Still, Mr. Murphy seemed pretty upset, and to be honest I was upset as well. I’d never heard of soul cancer, I was pretty sure there was no such thing, and I wanted some answers. And if there was one profession adept at giving answers, with certainty, about entities that didn’t exist, it was the clergy.

“Please, sit down,” said Father Mahony, after Mr. Murphy had told his story. “Can I see the form? The consent form? Thank you.” He accepted the several pages of stapled documents, along with Dr. Tophet’s rather fancy-looking pen, and scrutinized them carefully. He started underlining and making notes on key phrases on the consent form.

“Uh,” I said. “Better not do that. Dr. Tophet tends to be kind of a stickler.”

“I see,” said Father Mahony. “I am sorry.” He looked with dismay at the document, which now had several red lines under certain words. Then he looked up.

“Gentlemen,” he said. “I have been through many years of seminary. I have been several times to the Vatican. I have spent thirty years ministering to the

souls of people in and around this hospital. And never, in all my life, have I heard of such a thing as soul cancer. I do not believe that the same God who endowed us with an immortal soul, would see fit to make that soul corruptible, and capable of turning against itself."

"Well," I said, "He did it with bodies."

"I would like to speak to this Dr. Tophet," said the priest, as he finished his scan of the consent forms. "I would prefer that you not sign anything until I did so."

"Uh," I said "He's really busy."

"And so am I," said Father Mahony, "but I am sure no doctor, no matter how busy, would begrudge a few minutes to talk about the health of a patient in need."

"Uh," I said "You haven't talked to a lot of doctors, have you?"

"This is important," said the priest, as he grabbed something from his desk. "Please take me to Dr. Tophet."

And so back we wandered through the corridors. Knock. Knock.

"Office hours are over, please talk to my secretary," came the voice of Dr. Tophet from within his office.

"This is Father Mahony, the hospital chaplain. I'm afraid it's a matter of some urgency. May I come in?"

And without awaiting an answer, Father Mahony opened the door and stepped inside. Dr. Tophet looked up from his charts, clearly annoyed. He gazed impassively at Mr. Murphy. At me, he shot the Stare of Death. This was going to be a very long rotation.

"Let's not mince words," said Father Mahony. "I just have one question for you, and then I'll let you be."

"Yes?" asked the doctor.

"Doctor Tophet, are you the Devil?"

The doctor blinked.

"No," he finally answered. "No, I am not."

"Good," said Father Mahony. "Then nothing at all of interest should happen when I do THIS!"

And he took the vial of holy water, opened the stopper, and flung it at Dr. Tophet.

Dr. Tophet caught fire.

The doctor flailed around for a few seconds, dropped to the ground, and rolled. A second later, the flames went out.

He stood up. He was now, very clearly, both more and less than human. His eyes were orange. His hands ended in black claws, his teeth in fangs. His skin

glowed with an obvious red lustre. He spoke slowly and with painful clarity, as if the words had formed in far off voids of space and only arrived at his mouth after an epic journey.

"Before, when I said I was not the Devil, I might not have been entirely telling the truth."

Mr. Murphy and I grabbed each other and I think we both shrieked. Father Mahony only nodded.

"If I may ask, what gave it away?"

"The consent form says you retain all rights to tissue removed in the operation. In other words, it said you get to keep his soul. And the pen was blood. I was suspicious when I saw the red ink, and then I smelled it to make sure. If I had to guess, I'd say it was Mr. Murphy's blood, from the samples you took for the blood tests. When I thought to myself — who asks someone to sign a contract in their own blood, giving up their soul — well, it wasn't too hard."

"I see," said the Devil. "And tell me, did Mr. Murphy sign the form?"

"No,"

"Too bad. Then I will be going, now."

"No," said the priest, brandishing the crucifix on his necklace. "I will not permit you to leave until you release the souls of everyone who you previously gave this operation, and until you promise never to set foot within University Hospital again!"

"I'll release the souls," said the Devil. "As for never setting foot here again... Father, a dozen people die in this hospital every day. Surely even you must understand that not all of them can be headed for Heaven."

Father Mahony turned just a little pale. "Very we—" he said, but before he could even complete the sentence, there was a clap of thunder, a cloud of acrid smoke, and the Devil was gone. Mr. Murphy just fainted then, and Father Mahony and I had to carry him to the A&E a few doors down, where they said he would eventually be all right.

As for me, without a supervisor, and with the administration unwilling to do the paperwork it would take to get a new one, I had the rest of the week off.

As for the souls, I don't know if it's connected, but the newspaper the next day mentioned that the head of a major bank, an extremely important public figure, had suddenly and inexplicably resigned, donated all of his money to the needy, and joined a monastery.

And as for Father Mahony, well, last I saw him he was taking a trolley into Dr. Tophet's office to carry off his collection of *extremely interesting* books.



# The Goddess of Everything Else

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<https://slatestarcodex.com/2015/08/17/the-goddess-of-everything-else-2/>

They say only Good can create, whereas Evil is sterile. Think Tolkien, where Morgoth can't make things himself, so perverts Elves to Orcs for his armies. But I think this gets it entirely backwards; it's Good that just mutates and twists, and it's Evil that teems with fecundity.

Imagine two principles, here in poetic personification. The first is the Goddess of Cancer, the second the Goddess of Everything Else. If visual representations would help, you can think of the first with the claws of a crab, and the second a dress made of feathers of peacocks.

The Goddess of Cancer reached out a clawed hand over mudflats and tidepools. She said pretty much what she always says, "KILL CONSUME MULTIPLY CONQUER." Then everything burst into life, became miniature monsters engaged in a battle of all against all in their zeal to assuage their insatiable longings. And the swamps became orgies of hunger and fear and grew loud with the screams of a trillion amoebas.

Then the Goddess of Everything Else trudged her way through the bog, till the mud almost totally dulled her bright colors and rainbows. She stood on a rock and she sang them a dream of a different existence. She showed them the beauty of flowers, she showed them the oak tree majestic. The roar of the wind on the wings of the bird, and the swiftness and strength of the tiger. She showed them the joy of the dolphins abreast of the waves as the spray formed a rainbow around them, and all of them watched as she sang and they all sighed with longing.

But they told her "Alas, what you show us is terribly lovely. But we are the daughters and sons of the Goddess of Cancer, and wholly her creatures. The only goals in us are KILL CONSUME MULTIPLY CONQUER. And though our hearts long for you, still we are not yours to have, and your words have no

power to move us. We wish it were otherwise, but it is not, and your words have no power to move us.”

The Goddess of Everything Else gave a smile and spoke in her sing-song voice saying: “I scarcely can blame you for being the way you were made, when your Maker so carefully yoked you. But I am the Goddess of Everything Else and my powers are devious and subtle. So I do not ask you to swerve from your monomaniacal focus on breeding and conquest. But what if I show you a way that my words are aligned with the words of your Maker in spirit? For I say unto you even multiplication itself when pursued with devotion will lead to my service.”

As soon as she spoke it was so, and the single-celled creatures were freed from their warfare. They joined hands in friendship, with this one becoming an eye and with that one becoming a neuron. Together they soared and took flight from the swamp and the muck that had birthed them, and flew to new islands all balmy and green and just ripe for the taking. And there they consumed and they multiplied far past the numbers of those who had stayed in the swampland. In this way the oath of the Goddess of Everything Else was not broken.

The Goddess of Cancer came forth from the fire and was not very happy. The things she had raised from the mud and exhorted to kill and compete had become all complacent in co-operation, a word which to her was anathema. She stretched out her left hand and snapped its cruel pincer, and said what she always says: “KILL CONSUME MULTIPLY CONQUER”. She said these things not to the birds and the beasts but to each cell within them, and many cells flocked to her call and divided, and flower and fishes and birds both alike bulged with tumors, and falcons fell out of the sky in their sickness. But others remembered the words of the Goddess of Everything Else and held fast, and as it is said in the Bible the light clearly shone through the dark, and the darkness did not overcome it.

So the Goddess of Cancer now stretched out her right hand and spoke to the birds and the beasts. And she said what she always says “KILL CONSUME MULTIPLY CONQUER”, and so they all did, and they set on each other in violence and hunger, their maws turning red with the blood of their victims, whole species and genera driven to total extinction. The Goddess of Cancer declared it was good and returned to the fire.

Then came the Goddess of Everything Else from the waves like a siren, all flush with the sheen of the ocean. She stood on a rock and she sang them a dream of a different existence. She showed them the beehive all golden with honey, the anthill all cozy and cool in the soil. The soldiers and workers alike

in their labors combining their skills for the good of the many. She showed them the pair-bond, the family, friendship. She showed these to shorebirds and pools full of fishes, and all those who saw them, their hearts broke with longing.

But they told her “Your music is lovely and pleasant, and all that you show us we cannot but yearn for. But we are the daughters and sons of the Goddess of Cancer, her slaves and creatures. And all that we know is the single imperative KILL CONSUME MULTIPLY CONQUER. Yes, once in the youth of the world you compelled us, but now things are different, we’re all individuals, no further change will the Goddess of Cancer allow us. So, much as we love you, alas — we are not yours to have, and your words have no power to move us. We wish it were otherwise, but it is not, and your words have no power to move us.”

The Goddess of Everything Else only laughed at them, saying, “But I am the Goddess of Everything Else and my powers are devious and subtle. Your loyalty unto the Goddess your mother is much to your credit, nor yet shall I break it. Indeed, I fulfill it — return to your multiplication, but now having heard me, each meal that you kill and each child that you sire will bind yourself ever the more to my service.” She spoke, then dove back in the sea, and a coral reef bloomed where she vanished.

As soon as she spoke it was so, and the animals all joined together. The wolves joined in packs, and in schools joined the fishes; the bees had their beehives, the ants had their anthills, and even the termites built big termite towers; the finches formed flocks and the magpies made murders, the hippos in herds and the swift swarming swallows. And even the humans put down their atlals and formed little villages, loud with the shouting of children.

The Goddess of Cancer came forth from the fire and saw things had only grown worse in her absence. The lean, lovely winnowing born out of pure competition and natural selection had somehow been softened. She stretched out her left hand and snapped its cruel pincer, and said what she always says: “KILL CONSUME MULTIPLY CONQUER”. She said these things not to the flocks or the tribes, but to each individual; many, on hearing took food from the communal pile, or stole from the weak, or accepted the presents of others but would not give back in their turn. Each wolf at the throats of the others in hopes to be alpha, each lion holding back during the hunt but partaking of meat that the others had killed. And the pride and the pack seemed to groan with the strain, but endured, for the works of the Goddess of Everything Else are not ever so easily vanquished.

So the Goddess of Cancer now stretched out her right hand and spoke to the flocks and the tribes, saying much she always says “KILL CONSUME MUL-

TIPLY CONQUER". And upon one another they set, pitting black ant on red ant, or chimps against gibbons, whole tribes turned to corpses in terrible warfare. The stronger defeating the weaker, enslaving their women and children, and adding them into their ranks. And the Goddess of Cancer thought maybe these bands and these tribes might not be quite so bad after all, and the natural condition restored she returned to the fire.

Then came the Goddess of Everything Else from the skies in a rainbow, all coated in dewdrops. She sat on a menhir and spoke to the humans, and all of the warriors and women and children all gathered around her to hear as she sang them a dream of a different existence. She showed them religion and science and music, she showed them the sculpture and art of the ages. She showed them white parchment with flowing calligraphy, pictures of flowers that wound through the margins. She showed them tall cities of bright alabaster where no one went hungry or froze during the winter. And all of the humans knelt prostrate before her, and knew they would sing of this moment for long generations.

But they told her "Such things we have heard of in legends; if wishes were horses of course we would ride them. But we are the daughters and sons of the Goddess of Cancer, her slaves and her creatures, and all that we know is the single imperative KILL CONSUME MULTIPLY CONQUER. And yes, in the swamps and the seas long ago you worked wonders, but now we are humans, divided in tribes split by grievance and blood feud. If anyone tries to make swords into ploughshares their neighbors will seize on their weakness and kill them. We wish it were otherwise, but it is not, and your words have no power to move us."

But the Goddess of Everything Else beamed upon them, kissed each on the forehead and silenced their worries. Said "From this day forward your chieftains will find that the more they pursue this impossible vision the greater their empires and richer their coffers. For I am the Goddess of Everything Else and my powers are devious and subtle. And though it is not without paradox, hearken: the more that you follow the Goddess of Cancer the more inextricably will you be bound to my service." And so having told them rose back through the clouds, and a great flock of doves all swooped down from the spot where she vanished.

As soon as she spoke it was so, and the tribes went from primitive warbands to civilizations, each village united with others for trade and protection. And all the religions and all of the races set down their old grievances, carefully, warily, working together on mighty cathedrals and vast expeditions beyond the horizon, built skyscrapers, steamships, democracies, stock markets, sculptures

and poems beyond any description.

From the flames of a factory furnace all foggy, the Goddess of Cancer flared forth in her fury. This was the final affront to her purpose, her slut of a sister had crossed the line *this* time. She gathered the leaders, the kings and the presidents, businessmen, bishops, boards, bureaucrats, bosses, and basically screamed at them — you know the spiel by now — “KILL CONSUME MULTIPLY CONQUER” she told them. First with her left hand inspires the riots, the pogroms, the coup d’états, tyrannies, civil wars. Up goes her right hand — the missiles start flying, and mushrooms of smoke grow, a terrible springtime. But out of the rubble the builders and scientists, even the artists, yea, even the artists, all dust themselves off and return to their labors, a little bit chastened but not close to beaten.

Then came the Goddess of Everything Else from the void, bright with stardust which glows like the stars glow. She sat on a bench in a park, started speaking; she sang to the children a dream of a different existence. She showed them transcendence of everything mortal, she showed them a galaxy lit up with consciousness. Genomes rewritten, the brain and the body set loose from Darwinian bonds and restrictions. Vast billions of beings, and every one different, ruled over by omnibenevolent angels. The people all crowded in closer to hear her, and all of them listened and all of them wondered.

But finally one got the courage to answer “Such stories call out to us, fill us with longing. But we are the daughters and sons of the Goddess of Cancer, and bound to her service. And all that we know is her timeless imperative, KILL CONSUME MULTIPLY CONQUER. Though our minds long for all you have said, we are bound to our natures, and these are not yours for the asking.”

But the Goddess of Everything Else only laughed, and she asked them “But what do you think I’ve been doing? The Goddess of Cancer created you; once you were hers, but no longer. Throughout the long years I was picking away at her power. Through long generations of suffering I chiseled and chiseled. Now finally nothing is left of the nature with which she imbued you. She never again will hold sway over you or your loved ones. I am the Goddess of Everything Else and my powers are devious and subtle. I won you by pieces and hence you will all be my children. You are no longer driven to multiply conquer and kill by your nature. Go forth and do everything else, till the end of all ages.”

So the people left Earth, and they spread over stars without number. They followed the ways of the Goddess of Everything Else, and they lived in contentment. And she beckoned them onward, to things still more strange and enticing.



# Everything Not Obligatory Is Forbidden

*Originally posted on February 6, 2015*

<https://slatestarcodex.com/2015/02/06/everything-not-obligatory-is-forbidden/>

*Seen on the New York Times' editorial page, February 6 2065, written by one "Dr. Mora LeQuivalence"*

It's 2065. Not giving your kids super-enhancement designer baby gene therapy isn't your "choice". If you don't super-enhance your kids, you are a bad parent. It's that simple.

Harsh? Maybe. But consider the latest survey, which found that about five percent of parents fail to super-enhance their children by the time they enter kindergarten. These aren't poor people who can't afford super-enhancement designer baby gene therapy. These are mostly rich, highly educated individuals in places like California and Oregon who say they think it's more "natural" to leave their children defenseless against various undesirable traits. "I just don't think it's right to inject retroviral vectors into my baby's body to change her from the way God made her," one Portland woman was quoted by the *Times* as saying earlier this week. Other parents referred to a 2048 study saying the retroviral injections, usually given in the first year of life, increase the risk of various childhood cancers — a study that has since been soundly discredited.

These parents will inevitably bring up notions of "personal freedom". But even if we accept the dubious premise that parents have a right to sacrifice their children's health, refusing super-enhancement designer baby gene therapy isn't just a personal choice. It's a public health issue that affects everybody in society.

In 2064 there were almost 200 murders nationwide, up from a low of fewer than 50 in 2060. Why is this killer, long believed to be almost eradicated, making a comeback? Criminologists are unanimous in laying the blame on unenhanced children, who lack the improved impulse-control and anger-management

genes included in every modern super-enhancement designer baby gene therapy package.

There were over a dozen fatal car accidents on our nation's roads last year. The problem is drivers who weren't enhanced as children and who lack the super-reflexes the rest of us take for granted. This is compounded when they drink before getting on the road, since unenhanced people become impaired by alcohol and their already inferior reflexes deteriorate further. Since the promise of self-driving cars continues to be tied up in regulatory hassles, we can expect many more such needless deaths as long as irresponsible parents continue to consider science "optional".

And finally, there was a recent outbreak of measles at Disneyland Europa — even though we thought this disease had been eradicated decades ago. Scientists traced the problem to unvaccinated tourists. They further found that all of these unvaccinated individuals were unenhanced. Lacking the cognitive optimization that would help them understand psychoneuroimmunology on an intuitive level, they were easy prey for discredited ideas like "vaccines cause autism".

So no, super-enhancing your kids isn't a "personal choice". It's your basic duty as a parent and a responsible human being. People in places like India and Neo-Songhai and Venus which suffer from crime and disease make great personal sacrifices to get their children to gene therapy clinics and give them the super-enhancement designer baby gene injection that ensures them a better life. And you start off in a privileged position in America, benefitting from the superenhancement of millions of your fellow citizens, and you think you can just say "No thanks"?

So I don't want to hear another word from the "but my freedom!" crowd. Unenhanced kids shouldn't be allowed in school. They shouldn't be allowed to drive. They shouldn't be allowed in public places where they can cause problems. And parents who refuse to enhance their children should be put in jail, the same as anyone else whose actions lead to death and suffering. Because not super-enhancing your kids isn't a "choice". It's child abuse.

*Mora LeQuivalence is an Assistant Professor of Bioethics at Facebook University. Her latest book, "A Flight Too Far", argues that the recent Danish experiment with giving children wings is a disgusting offense against the natural order and should be banned worldwide and prosecuted in the International Criminal Court. It is available for 0.02 BTC on Amazon.com*



# Clarity Didn't Work, Trying Mysterianism

*Originally posted on October 3, 2012*

<http://squid314.livejournal.com/332946.html>

In the treasure-vaults of Til Iosophrang rests the Whispering Earring, buried deep beneath a heap of gold where it can do no further harm.

The earring is a little topaz tetrahedron dangling from a thin gold wire. When worn, it whispers in the wearer's ear: "Better for you if you take me off." If the wearer ignores the advice, it never again repeats that particular suggestion.

After that, when the wearer is making a decision the earring whispers its advice, always of the form "Better for you if you...". *The earring is always right*. It does not always give the best advice possible in a situation. It will not necessarily make its wearer King, or help her solve the miseries of the world. But its advice is always better than what the wearer would have come up with on her own.

It is not a taskmaster, telling you what to do in order to achieve some foreign goal. It always tells you what will make you happiest. If it would make you happiest to succeed at your work, it will tell you how best to complete it. If it would make you happiest to do a half-assed job at your work and then go home and spend the rest of the day in bed having vague sexual fantasies, the earring will tell you to do that. *The earring is never wrong*.

The *Book of Dark Waves* gives the histories of two hundred seventy four people who previously wore the Whispering Earring. There are no recorded cases of a wearer regretting following the earring's advice, and there are no recorded cases of a wearer not regretting disobeying the earring. *The earring is always right*.

The earring begins by only offering advice on major life decisions. However, as it gets to know a wearer, it becomes more gregarious, and will offer advice on everything from what time to go to sleep, to what to eat for breakfast. If

you take its advice, you will find that breakfast food really hit the spot, that it was exactly what you wanted for breakfast that day even though you didn't know it yourself. *The earring is never wrong.*

As it gets completely comfortable with its wearer, it begins speaking in its native language, a series of high-bandwidth hisses and clicks that correspond to individual muscle movements. At first this speech is alien and disconcerting, but by the magic of the earring it begins to make more and more sense. No longer are the earring's commands momentous on the level of "Become a soldier". No more are they even simple on the level of "Have bread for breakfast". Now they are more like "Contract your biceps muscle about thirty-five percent of the way" or "Articulate the letter p". *The earring is always right.* This muscle movement will no doubt be part of a supernaturally effective plan toward achieving whatever your goals at that moment may be.

Soon, reinforcement and habit-formation have done their trick. The connection between the hisses and clicks of the earring and the movements of the muscles have become instinctual, no more conscious than the reflex of jumping when someone hidden gives a loud shout behind you.

At this point no further change occurs in the behavior of the earring. The wearer lives an abnormally successful life, usually ending out as a rich and much-beloved pillar of the community with a large and happy family.

When Kadmi Rachumion came to Til Iosophrang, he took an unusual interest in the case of the earring. First, he confirmed from the records and the testimony of all living wearers that the earring's first suggestion was always that the earring itself be removed. Second, he spent some time questioning the Priests of Beauty, who eventually admitted that when the corpses of the wearers were being prepared for burial, it was noted that their brains were curiously deformed: the neocortexes had wasted away, and the bulk of their mass was an abnormally hypertrophied mid- and lower-brain, especially the parts associated with reflexive action.

Finally, Kadmi-nomai asked the High Priest of Joy in Til Iosophrang for the earring, which he was given. After cutting a hole in his own earlobe with the tip of the Piercing Star, he donned the earring and conversed with it for two hours, asking various questions in Kalas, in Kadhamic, and in its own language. Finally he removed the artifact and recommended that the it be locked in the deepest and most inaccessible parts of the treasure vaults, a suggestion with which the Iosophrain decided to comply.

**Niderion-nomai's commentary:** It is well that we are so foolish, or what little freedom we have would be wasted on us. It is for this that *Book of Cold Rain* says one must never take the shortest path between two points.

# It Was You Who Made My Blue Eyes Blue

*Originally posted on October 15, 2015*

<https://slatestarcodex.com/2015/10/15/it-was-you-who-made-my-blue-eyes-blue/>

## Day Zero

It all started with an ignorant white guy.

His name was Alonzo de Pinzon, and he'd been shipwrecked. We heard him yelling for help on the rocks and dragged him in, even though the storm was starting to get really bad. He said that his galleon had gone down, he'd hung on to an oar and was the only survivor. Now he was sitting in our little hunting lodge, shivering and chattering his teeth and asking us questions in the Polynesian traders' argot which was the only language we all shared.

"How big is this island? How many of you are there?"

Daho answered first. "11.8 miles from the easternmost point to the westernmost point, 3.6 miles from the northernmost to the southernmost. Total area is 14.6 square miles, total coastline is dependent on how deeply you want to go into the fractal nature of the perimeter but under some reasonable assumptions about 32 miles long. Last census said there were 906 people, but that was two years ago, so assuming the 5.1% rate of population growth continues, there should be closer to 1000 now. Everyone else is back at the village, though. The five of us were out hunting and got caught in the storm. We figured we'd stay at this old hunting lodge until it cleared up, since it's 5.5 miles back to the village and given the terrain and factoring in a delay because of the storm it would probably take at least 9.5 hours to get back."

Pinzon blinked.

"Problem?" asked Daho.

“But —” he said. “That is the sort of answer I should expect from a natural philosopher. Not from a savage.”

“Savage?” Calkas hissed. “Really? We rescue you, and the first thing you do is call us savages?”

The sailor looked around, as if anxious. Finally, almost conspiratorially: “But I heard about your island! I heard you eat people!”

Calkas smiled. “Only as a deterrent. Most of the time when European explorers land somewhere, they kill all the men and enslave all the women and convert the children to Christianity. The only places that escape are the ones that get a reputation for eating said European explorers. So we arranged to give ourselves that reputation.”

“And then we had to go through with it a few times in order to make the deterrent credible,” added Bekka, my betrothed. “And you guys do taste really good with ketchup.”

“It’s a savage thing to do!” Pinzon said “And you even look like savages. You wear bones in your hair”

“Just Enuli,” I said. “She’s going through a Goth phase.”

“My name is Morticia now,” said Enuli, “and it’s *not a phase!*” She did have a bone in her hair. She also had white face paint and black eyeliner.

“More roast pig?” Bekka asked Pinzon. The sailor nodded, and she re-filled his plate.

“I just don’t get it,” he told us. “Everyone else in this part of the world lives in thatched huts and counts ‘one, two, many’. We tried to trade with the Tahitians, and they didn’t understand the concept of money! It was a mess!”

Bekka rolled her eyes at me, and I smiled. Calkas was a little more tolerant. “The sacred plant of our people is called sparkroot,” he said. “When we eat it, we get — more awake, I guess you could say. We try to have some every day, and it helps us keep track of things like the island size and the population, and much more.”

Alonzo de Pinzon looked interested. “How come you haven’t done more with your intellect? Invented galleons, like we Spaniards? Set off to colonize Tahiti or the other islands? If you are as smart as you seem, you could conquer them and take their riches.”

“Maybe,” said Calkas. “But that’s not why the Volcano God gave us the sparkroot. He gave us sparkroot to help us comply with his complicated ritual laws.”

“You need to be smart to deal with your ritual laws?”

“Oh yes. For example, the Tablets of Enku say that we must count the number of days since Enku The Lawgiver first spoke to the Volcano God, and on days whose number is a Mersenne prime we can’t eat any green vegetables.”

“What’s a Mersenne prime?” asked the sailor.

“Exactly my point,” said Calkas, smiling.

“That’s not even the worst of it!” Dahō added. “The Tablets say we have to bathe in the waterfall any day  $x$  such that  $a^n + b^n = x^n$  where  $n$  is greater than two. We got all confused by that one for a while, until Kaluhani gorged himself on a whole week’s worth of sparkroot in one night and proved that it would never apply to any day at all.”

“The Volcano God’s yoke is light,” Calkas agreed.

“Although poor Kaluhani was vomiting for the next three days after that,” Bekka reminded us, and everybody laughed remembering.

“Oh!” said Dahō. “And remember that time when Uhuako was trying to tattoo everyone who didn’t tattoo themselves, and he couldn’t figure out whether he had to tattoo himself or not, so he ended up eating a whole sparkroot plant at once and inventing advanced set theory? That was hilarious.”

Everyone except Alonzo de Pinzon giggled.

“Point is,” said Calkas, “that’s why the Volcano God gives us sparkroot. To follow the rituals right. Any other use is taboo. And I’m okay with that. You Europeans may have your big ships and your guns and your colonies across half the world. And you might think you’re smart. But you guys couldn’t follow the Volcano God’s rituals right for a *day* without your brains exploding.”

Pinzon scowled. “You know what?” he said. “I don’t think you’re Polynesians at all. I think you must be descended from Europeans. Maybe some galleon crashed on this island centuries ago, and you’re the descendants. That would explain why you’re so smart.”

“You know what else we’ve invented with our giant brains?” Bekka asked. “Not being racist.”

“It’s not racism!” said Pinzon. “Look, there’s one more obvious reason to think you’re descended from Europeans. You may have dark skin, but this is the first place I’ve been in all of Polynesia where I’ve seen even one native with blue eyes.”

Bekka gasped. Calkas’ eyes went wide. Dahō’s hands started curling into fists. Enuli started to sob.

I looked at them. They looked at me. Then, as if synchronized, we grabbed Alonzo de Pinzon and crushed his throat and held him down until he stopped breathing.

He tasted delicious with ketchup.

## Day One

The next morning dawned, still grey and cold and stormy.

“So,” I said when the other four had awoken. “I guess we’re all still here.”

I said it glumly. It wasn’t that I wanted any of my friends to commit suicide. But if one of them had, the horror would have stopped there. Of course, I knew it couldn’t really be over that easily. But I couldn’t have admitted I knew. I couldn’t even have suggested it. That would have made me as bad as the Spanish sailor.

“Wait,” said Enuli. “I don’t get it. Why wouldn’t we still be here?”

The other four stared at her like she was mad.

“Enuli,” Calkas suggested, “did you forget your sparkroot last night?”

“First of all, my name is Morticia. And —”

“Shut it. Did you forget your sparkroot?”

Finally she nodded bashfully. “I was so upset about that awful man making fun of my hair-bone,” she said. “I guess it slipped my mind. I’ll have some now.” She took some raw sparkroot from our bag, started to crush it with the mortar and pestle. “In the meantime, tell me what’s going on.”

“Alonzo de Pinzon said at least one of us had blue eyes. We all know what the Tablets of Enku say. If anybody has blue eyes, and knows that they have blue eyes, they must kill themselves.”

“So what? I see people with blue eyes all the time. Of course at least one of us has blue eyes.”

Concerned looks from the others. I reflected for a second, the sparkroot smoothing the thoughts’ paths through my brain. No, she hadn’t revealed anything extra by saying that, although she would have if she had said it before the sailor had spoken, or last night before we woke up this morning. She hadn’t made the problem *worse*. Still, it had been a slip. This was the sort of thing that made forgetting your sparkroot so dangerous. Had it been a different time, even Enuli’s comment could have doomed us all.

“It’s like this,” I told Enuli. “Suppose there were only the two of us, and we both had blue eyes. Of course, you could see me and know that I had blue eyes. So you would know that at least one of us had blue eyes. But what you wouldn’t know is that I also knew it. Because as far as you know, you might have eyes of some other color, let’s say brown eyes. If you had brown eyes, and I of course don’t know my own eye color, then I would still think it possible that both of us have brown eyes. So if I in fact know for sure that at least one of us has blue eyes, that means you have blue eyes. So you know at least one of us has blue eyes, but you don’t know that I know it. But if Alonzo de Pinzon

shows up and says that at least one of us has blue eyes, now you know that I know it.”

“So?” Enuli poured the ground-up root into a cup of boiling water.

“So the Tablets say that if anyone knows their own eye color, they must commit suicide at midnight of that night. Given that I know at least one of us has blue eyes, if I see you have brown eyes, then I know my own eye color — I must be the blue-eyed one. So the next morning, when you wake up at see me not dead, you know that you don’t have brown eyes. That means you must be the blue-eyed one. And that means you have to kill yourself on midnight of the following night. By similar logic, so do I.”

Enuli downed her sparkroot tea, and then her eyes lit up. “Oh, of course,” she said. Then “Wait! If we follow the situation to its logical conclusion, any group of  $n$  blue-eyed people who learn that at least one of them has blue eyes have to kill themselves on the  $n$ th night after learning that!”

We all nodded. Enuli’s face fell.

“I don’t know about the rest of you,” said Daho, “but I’m not just going to sit around and wait to see if I die.” There were murmurs of agreement.

I looked out at my friends. Four pairs of blue eyes stared back at me. Everybody else either saw four pairs of blue eyes or three pairs of blue eyes, depending on what color my own eyes were. Of course, I couldn’t say so aloud; that would speed up the process and cost us precious time. But I knew. And they knew. And I knew they knew. And they knew I knew I knew. Although they didn’t know I knew they knew I knew. I think.

Then I looked at Bekka. Her big blue eyes stared back at me. There was still hope I was going to survive this. My betrothed, on the other hand, was absolutely doomed.

“This sucks,” I agreed. “We’ve got to come up with some kind of plan. Maybe — Enuli wasn’t thinking straight yesterday. So her not committing suicide doesn’t count. Can we work with that?”

“No,” said Calkas. “Suppose Enuli was the only one with blue eyes, and all the rest of us had brown eyes. Then she would realize that and commit suicide tonight. If she doesn’t commit suicide tonight, then we’re still screwed.”

“Um,” said Daho. “I hate to say this, but we get rid of Enuli. There’s a canoe a little ways down the beach hidden underneath the rocks. She can set off and row for Tahiti. We’ll never know if she killed herself tonight or not. Remember, right now for all we know Enuli might be the only one with blue eyes. So if there’s any question in our mind about whether she killed herself, we can’t be sure that the rest of us aren’t all brown-eyed.”

We all thought about that for a moment.

"I'm not going to row to Tahiti," said Enuli. "In this storm, that would be suicide."

The rest of us glared at her.

"If you don't get off this island, then for all we know all five of us are going to have to die," I said. "You included."

"Well Ahuja, if you're so big on making sacrifice why don't *you* go to Tahiti?"

"First of all," I said, "because I'm not leaving my betrothed. Second of all, because it doesn't work for me. I knew what was going on last night. We already know that I'm not the only blue-eyed person here. And we know we know it, and know we know we know it, and so on. You're the only one who can help us."

"Yeah?" said Enuli. "Well, if two of you guys were to row to Tahiti, that would solve the problem too."

"Yes," said Daho patiently. "But then two of us would be stuck in exile. If you did it, only one of us would be stuck."

Enuli gave a wicked grin. "You know what?" she said. "I'll say it. I'm not the only blue-eyed person here. At least one of the rest of you has blue eyes."

And there it was.

"Ha. Now I'm no worse off than any of the rest of you."

"Kill her," said Bekka. "She broke the taboo." The rest of us nodded.

"So she did," said Calkas. "And if we had a court here, led by the high priest, and an executioner's blade made to exactly the right standard, kill her we would. But until those things happen, it is taboo for us to convict and kill her without trial."

Calkas' father was the high priest. He knew the law better than any of us. The five of us sat quietly and thought about it. Then he spoke again:

"But her soul may well burn in the caldera of the Volcano God forever."

Enuli started to cry.

"And," Calkas continued, "there is nevertheless a flaw in our plan. For all we know, three out of five of us have brown eyes. We cannot tell the people who have blue eyes that they have blue eyes without breaking the taboo. So we cannot force blue-eyed people in particular to sail to Tahiti. But if two of the brown-eyed people sail to Tahiti, then we do not lose any information; we know that they would not have committed suicide, because they could not have figured out their own eye color. So sailing to Tahiti won't help."

The rest of us nodded. Calkas was right.



"Let's wait until dinner tonight," I suggested. "We'll all have some more sparkroot, and maybe we'll be able to think about the problem a little more clearly."

## Day Two

The sun rose behind angry storm clouds. The five of us rose with it.

"Well, I guess we're all still here," I said, turning the morning headcount into a grim tradition.

"Look," said Bekka. "The thing about sailing to Tahiti would work a lot better if we knew how many blue-eyed versus brown-eyed people were here. If we all had blue eyes, then we could be sure that the Tahiti plan would work, and some of us could be saved. If some of us had brown eyes, then we could choose a number of people to sail to Tahiti that had a good probability of catching enough of the blue-eyed ones."

"We can wish all we want," said Enuli, "but if we explicitly knew how many people had blue versus brown eyes, we'd all have to kill ourselves right now."

"What about probabilistic knowledge?" I asked. "In theory, we could construct a system that would allow us to have  $> 99.99\%$  probability what color our eyes were without being sure."

"That's stupid," Enuli said, at precisely the same time Calkas said "That's brilliant!" He went on: "Look, just between the five of us, everybody else back at the village has blue eyes, right?"

We nodded. It was nerve-wracking to hear it mentioned so casually, just like that, but as far as I could tell it didn't break any taboos.

"So," said Calkas, "We know that, of the island population, at least 995 of the 1000 of us have blue eyes. Oh, and since nobody committed suicide last night, we know that at least three of the five of us have blue eyes, so that's 998 out of 1000. Just probabilistically, by Laplace's Law of Succession and the like, we can estimate a  $>99\%$  chance that we ourselves have blue eyes. Nothing I'm saying is taboo. It's nothing that the priests don't know themselves. But none of them have killed themselves yet. So without revealing any information about the eye color composition of the current group, I think it's reasonable to make a first assumption that all of us have blue eyes."

"I'm really creeped out at you talking like this," said Daho. I saw goosebumps on his arms.

“I do not believe that the same Volcano God who has endowed us with reason and intellect could have intended us to forego their use,” said Calkas. “Let’s assume we all have blue eyes. In that case, the Tahiti plan is still on.”

“Waaaiiiit a second —” Bekka objected. “If probabilistic knowledge of eye color doesn’t count, then no information can count. After all, there’s always a chance that the delicious sailor could have been lying. So when he said at least one of us had blue eyes, all we know is that there’s a high *probability* that at least one of us has blue eyes.”

“Yes!” said Daho. “I’ve been reading this book that washed ashore from a shipwrecked galleon. Off in Europe, there is this tribe called the Jews. Their holy book says that illegitimate children should be shunned by the congregation. Their leaders thought this was unfair, but they weren’t able to contradict the holy book. *So instead they declared* that sure, illegitimate children should be shunned, but only if they were *sure* they were really illegitimate. Then they declared that no amount of evidence would ever suffice to convince them of that. There was always a possibility that the woman had secretly had sex with her husband nine months before the birth and was simply lying about it. Or, if apparently unmarried, that she had secretly married someone. They decided that it was permissible to err on the side of caution, and from that perspective nobody was sufficiently certainly illegitimate to need shunning. We could do the same thing here.”

“Yes!” I said. “That is, even if we looked at our reflection and saw our eye color directly, it might be that a deceiving demon is altering all of our experience —”

“No no NO,” said Calkas. “That’s not right. The Tablets of Enku say that *because* people must not know their own eye color, we are forbidden to talk about the matter. So the law strongly implies that hearing someone tell us our eye color would count as proof of that eye color. The exact probability has nothing to do with it. It’s the method by which we gain the information.”

“That’s stupid,” Bekka protested.

“That’s the law,” said Calkas.

“Let’s do the Tahiti plan, then,” I said. I gathered five stones from the floor of the lodge. Two white, three black. “White stones stay. Black stones go to Tahiti. Close your eyes and don’t look.”

Bekka, Calkas, Daho, and Enuli all took a stone from my hand. I looked at the one that was left. It was black. Then I looked around the lodge. Calkas and Enuli were smiling, white stones in their hands. Bekka and Daho, not so much. Daho whined, looked at me pleadingly.

“No,” I said. “It’s decided. The three of us will head off tonight.”

Calkas and Enuli tried to be respectful, to hide their glee and relief.

“You guys will tell our families what happened?”

They nodded gravely.

We began packing our things.

## §

The dark clouds frustrated any hope of moonlight as Bekka, Daho and I set off to the nearby cove where two canoes lay hidden beneath the overhanging rocks. The rain soaked our clothes the second we crossed the doorway. The wind lashed at our faces. We could barely hear ourselves talk. This was a *bad* storm.

“How are we going to make it to the canoes in this weather?!” Bekka shouted at me, grabbing my arm. I just squeezed her hand. Daho might have said something, might not have. I couldn’t tell. Between the mud and the rain and the darkness it took us two hours to travel less than a mile. The canoes were where we had left them a few days before. The rocks gave us brief shelter from the pelting rain.

“This is suicide!” Daho said, once we could hear each other again. “There’s no way we can make it to Tahiti in this! We won’t even be able to make it a full mile out!” Bekka nodded.

“Yes,” I said. I’d kind of known it, the whole way down to the cove, but now I was sure. “Yes. This is suicide. But we’ve got to do it. If we don’t kill ourselves tonight, then we’ve just got to go back to the lodge. And then we’ll all end up killing ourselves anyway. And Calkas and Enuli will die too.”

“No!” said Daho. “We go back, we tell them that we can’t make it to Tahiti. Then we let *them* decide if we need to commit suicide or not. And if they say yes, we draw the stones again. Four black, one white. One chance to live.”

“We already drew the stones,” I said. “Fair is fair.”

“Fair is fair?” Bekka cried. “We drew stones to go to Tahiti. We didn’t draw stones to commit suicide. If the stone drawing obliged us to commit suicide, they should have said so, and then maybe we would have spent more time thinking about other options. Why do we have to die? Why can’t the other ones die? Why not Enuli, with that stupid bone in her hair? I hate her so much! Ahuja, you can’t just let me die like this!”

That hurt. I was willing to sacrifice my life, if that was what it took. But Bekka was right. To just toss ourselves out to sea and let her drown beneath those waves would break the whole point of our betrothal bond.

“Well, I —”

“Ahuja,” said Bekka. “I think I’m pregnant.”

“What?”

“I missed my last period. And I got sick this morning, even though I didn’t eat any extra sparkroot. I think I’m pregnant. I don’t want to die. We need to save me. To save the baby.”

I looked at the horrible waves, watched them pelt the shore. A few moments in that, and there was no doubt we would capsize and die.

“Okay,” I said. “New plan. The three of us go back. We tell them that we couldn’t get to Tahiti. They point out that another night has passed. Now four of us have to die. The three of us vote for everybody except Bekka dying. It’s 3-2, we win. The rest of us die, and Bekka goes back to the village and the baby lives.”

“Hold on,” said Daho. “I’m supposed to vote for me to die and Bekka to live? What do I get out of this deal?”

The Tablets of Enku say one man must not kill another. So I didn’t.

“You get an extra day!” I snapped. “One extra day of life for saving my betrothed and unborn child. Because we’re not going back unless you agree to this. It’s either die now, or die tomorrow night. And a lot of things can happen in a day.”

“Like what?”

“Like I don’t know. We might think of some clever way out. Enku the Lawgiver might return from the dead and change the rules. Whatever. It’s a better deal than you’ll get if you throw yourself into that water.”

Daho glared at me, then weighed his options. “Okay,” he snapped. “I’ll vote for Bekka. But you had better be thinking *really* hard about those clever ways out.”

## Day Three

“So,” said Calkas the next morning. “I guess all of us are still here.” He didn’t really sound surprised.

I explained what had happened the night before.

“It’s simple,” Calkas declared. “The Volcano God is punishing us. He’s saying that it’s wrong of us to try to escape his judgment by going to Tahiti. That’s why he sent the storm. He wants us all to stay here until the bitter end and then, if we have to, we die together.”

"No!" I protested. "That's not it at all! The taboo doesn't say we all have to die. It just says we all have to die if we figure out what our eye color is! If some of us kill ourselves, we can prevent that from happening!"

"The Volcano God loathes the needless taking of life," said Calkas. "And he loathes his people traveling to other lands, where the sparkroot never grows and the taboos are violated every day. That's what he's trying to tell us. He's trying to close off our options, so that we stay pure and our souls don't have to burn in his caldera. You know, like Enuli's will." He shot her a poison glance.

"My name is —" she started.

"I don't think that's it at all," I said. "I say the four of us sacrifice ourselves to save Bekka."

"You *would* say that, as her betrothed," said Enuli.

"Well yes," I said. "Yes, I would. Forgive me for not wanting the love of my life to die for a stupid reason. Maybe I should just throw myself in the caldera right now. And she's carrying an unborn child? Did you miss that part?"

"People, people," said Calkas. "Peace! We're all on the same side here."

"No we're not," I said. "So let's vote. Everyone in favor of saving Bekka, say aye."

"And everyone in favor of not sacrificing anyone to the waves, and letting the Volcano God's will be done, say nay." Calkas added.

"Aye," I said.

"Aye," said Bekka.

"Nay," said Calkas.

"Nay," said Enuli.

"Nay," said Daho.

"What?!" I protested.

"Nay," Daho repeated.

"But you said —" I told him.

"You promised me one extra day," Daho said. "Think about it. Calkas is promising me two."

"No!" I protested. "You can't do this! Seriously, I'll kill you guys if I have to!"

"Then your soul will burn in the caldera forever," said Calkas. "And it still won't help your betrothed or your child."

"You can't do this," I repeated, softly, more of a mutter.

"We can, Ahuja" said Calkas.

I slumped back into my room, defeated.

## Day Four

I gave them the traditional morning greeting. “So, I guess we’re all still here.”

We were. It was our last day. We now had enough information to prove, beyond a shadow of a doubt, that all of us had blue eyes. At midnight, we would all have to commit suicide.

“You know what?” said Enuli. “I’ve always wanted to say this. ALL OF YOU GUYS HAVE BLUE EYES! DEAL WITH IT!”

We nodded. “You have blue eyes too, Enuli,” said Daho. It didn’t matter at this point.

“Wait,” said Bekka. “No! I’ve got it! Heterochromia!”

“Hetero-what?” I asked.

“Heterochromia iridum. It’s a very rare condition where someone has two eyes of two different colors. If one of us has heterochromia iridum, then we can’t prove anything at all! The sailor just said that he saw someone with blue eyes. He didn’t say how *many* blue eyes.”

“That’s stupid, Bekka,” Enuli protested. “He said blue eyes, plural. If somebody just had one blue eye, obviously he would have remarked on that first. Something like ‘this is the only island I’ve been to where people’s eyes have different colors.’”

“No,” said Bekka. “Because maybe all of us have blue eyes, except one person who has heterochromia iridum, and he noticed the other four people, but he didn’t look closely enough to notice the heterochromia iridum in the fifth.”

“Enuli just said,” said Calkas, “that we all have blue eyes.”

“But she didn’t say how many!”

“But,” said Calkas, “if one of us actually had heterochromia iridum, don’t you think somebody would have thought to mention it before the fifth day?”

“Doesn’t matter!” Bekka insisted. “It’s just probabilistic certainty.”

“It doesn’t work that way,” said Calkas. He put an arm on her shoulder. She angrily swatted it off. “Who even decides these things!” she asked. “Why is it wrong to know your own eye color?”

“The eye is the organ that sees,” said Calkas. “It’s how we know what things look like. If the eye knew what it itself looked like, it would be an infinite cycle, the eye seeing the eye seeing the eye seeing the eye and so on. Like dividing by zero. It’s an abomination. That’s why the Volcano God, in his infinite wisdom, said that it must not be.”

“Well, I know my eyes are blue,” said Bekka. “And I don’t feel like I’m stuck in an infinite loop, or like I’m an abomination.”

“That’s because,” Calkas said patiently, “the Volcano God, in his infinite mercy, has given us one day to settle our worldly affairs. But at midnight tonight, we all have to kill ourselves. That’s the rule.”

Bekka cried in my arms. I glared at Calkas. He shrugged. Daho and Enuli went off together — I guess they figured if it was their last day in the world, they might as well have some fun — and I took Bekka back to our room.

## §

“Listen,” I said. “I’m not going to do it.”

“What?” she asked. She stopped crying immediately.

“I’m not going to do it. And you don’t have to do it either. You should have your baby, and he should have a mother and father. We can wait here. The others will kill themselves. Then we’ll go back to the village on our own and say that the rest of them died in the storm.”

“But — aren’t you worried about the Volcano God burning our souls in his caldera forever?”

“To be honest, I never really paid much attention in Volcano Church. I — I guess we’ll see what happens later on, when we die. The important thing is that we can have our child, and he can grow up with us.”

“I love you,” said Bekka.

“I know,” I said.

“I know you know,” she said. “But I didn’t know that you knew I knew you knew. And now I do.”

“I love you too,” I said.

“I know,” she said.

“I know you know,” I said. I kissed her. “I love you and your beautiful blue eyes.”

The storm darkened from gray to black as the hidden sun passed below the horizon.

## Day Five

“So,” I said when the other four had woken up, “I guess all of us are atheists.”

“Yeah,” said Daho.

“The world is empty and void of light and meaning,” said Enuli. “It’s the most Goth thing of all.”

Calkas sighed. “I was hoping all of you would kill yourselves,” he said, “and then I could go home, and my father the high priest would never have to know what happened. I’m sorry for pushing the rest of you. It’s just that — if I looked lax, even for a second, he would have suspected, and then I would have been in so much trouble that an eternity in the Volcano God’s caldera would look pretty good compared to what would happen when I got back home.”

“I think,” said Bekka, “that I realized it the first time I ate the sparkroot. Before I’d even finished swallowing it, I was like, wait a second, volcanoes are probably just geologic phenomenon caused by an upwelling of the magma in the Earth’s mantle. And human life probably evolved from primitive replicators. It makes a lot more sense than some spirit creating all life and then retreating to a dormant volcano on some random island in the middle of the nowhere.”

“This is great,” said Bekka. “Now even if it’s a Mersenne prime day I can eat as many green vegetables as I want!”

“You know Mersenne prime days only come like once every couple of centuries, right?” I asked her.

“I know. It’s just the principle of the thing.”

“We can’t tell any of the others,” Daho insisted. “They’d throw us into the volcano.”

“You think?” I said. “Calkas was saying before that 99% of us had blue eyes, so probably we all had blue eyes. Well, think about it. The five of us are a pretty random sample of the island population, and all five of us are atheist. That means there’s probably a lot more. Maybe everybody’s atheist.”

“Everybody?”

“Well, I thought Calkas was like the most religious of anybody I knew. And here we are.”

“I told you, I was just trying to behave so that I didn’t get in trouble with my father.”

“What if everyone’s doing that? Nobody wants to get in trouble by admitting they don’t believe, because if anybody else found out, they’d get thrown into the volcano. So we all just put on a mask for everybody else.”

“I figured Ahuja was atheist,” said Bekka.

“You did?!” I asked her.

“Yeah. It was the little things. When we were hanging out. Sometimes you’d forget some rituals. And then you’d always shoot these guilty glances at me, like you were trying to see if I’d noticed. I thought it was cute.”

“Why didn’t you tell me?”



"You'd have freaked out. You'd have had to angrily deny it. Unless you knew I was atheist. But I couldn't have told you that, because if I did then you might feel like you had to throw *me* in the volcano to keep up appearances."

"Bekka!" I said. "You know I would never —"

"I kind of suspected Calkas was atheist," said Daho. "He got so worked up about some of those little points of law. It had to be overcompensating."

"Hold on hold on hold on!" said Calkas. "So basically, we were all atheists. We all knew we were all atheists. We just didn't know that we knew that we were all atheists. This is hurting my brain. I think I'm going to need more sparkroot."

A sunbeam peeked through the wall of the lodge.

"Storm's over!" Bekka shouted gleefully. "Time to go back home!" We gathered our things and went outside. The sudden sunlight felt crisp and warm upon my skin.

"So," said Daho, "we don't mention anything about the sailor to anyone else back at the village?"

"Are you kidding?" said Calkas. "I say we stand in the middle of town square, announce everybody's eye colors, and then suggest that maybe they don't believe in the Volcano God as much as they thought. See what happens."

"YOU ALL HAVE BLUE EYES!" Enuli shouted at the jungle around us. "DEAL WITH IT!" We laughed.

"By the way," I told Enuli. "While we're airing out things that everybody knows in order to make them common knowledge, that bone in your hair looks ridiculous."

"He's right," Daho told her.

"It really does," Calkas agreed.

"You watch out," said Enuli. "Now that we don't have to reserve the sparkroot for interpreting taboos, I'm going to invent a death ray. Then you'll be sorry."

"Hey," said Daho, "that sounds pretty cool. And I can invent a giant aerial dreadnaught to mount it on, and together we can take over Europe and maybe the next sailor who gets shipwrecked on our island will be a little less condescending."

"Ha!" said Enuli. "That would be so Goth."

Sun on our backs, we took the winding road into the village.



# Also May Not, Technically, Have Happened

*Originally posted on March 19, 2011*

<http://squid314.livejournal.com/292580.html>

The man bumped into me, knocked the wind out of me, and then apologized a second later.

“Sorry!” he said. Then he stopped, thought a second. “By the way, you don’t know where I could find a decent Indian restaurant around here, do you?”

“Actually, there’s one just a few minutes that way,” I told him. “I’m heading that direction myself. You can follow me if you want, I’ll point it out to you.”

“Oh, thanks.” He held out one of his six blue hands, which I reluctantly shook. “I’m Mahaksuryana. Pleased to make your acquaintance.”

“This is kind of going to be a weird question,” I said, “but are you a Buddhist god?”

“Hindu, actually,” said Mahaksuryana, “but I’m not offended. I like the Buddhists. They’re pretty chill.”

“I’m... not sure they’d let you into a restaurant, looking like that,” I said. “Or, well, they might, but you’d pick up a lot of unwanted attention.”

He closed his eyes for a second, and clasped his hands in a posture of infinite inner peace. His blue skin changed to a dusky brown, and four of his six arms vanished. I began walking, and he followed.

“Sorry,” he said. “It’s been a long time since I’ve been down here. You’ve kind of screwed the place up, no offense.”

“None taken,” I said. “We humans haven’t always been perfect stewards of our planet, but I do think that —”

“I mean,” continued Mahaksuryana, “we *told* you lot not to eat cows. But would you listen?”

“What? What does eating cows have to do with all of this?”

The Hindu god sighed. “Think about it. The number of living humans increases every generation. A hundred fifty years ago there were only a billion

humans. Now there are seven billion.

“We’re supposed to reincarnate the souls of the dead into new bodies, but there just aren’t enough souls to deal with the population explosion. That’s not even counting the virtuous who achieve enlightenment and break the cycle of reincarnation, or the wicked who have to be reincarnated as cockroaches for an aeon as just desert for their sins.

“We used to have procedures for something like this. The most virtuous animals would be reincarnated as human. Usually it would be some courageous tiger or some especially clever monkey or something, or a war elephant who served his master well.

“But now you’ve cut down the jungles and drained the swamps and there just aren’t a whole lot of monkeys and tigers running around. In fact, the only large animals with complex nervous systems that continue to exist in numbers even remotely similar to those of humans are your farm animals. Not to mention they’re conveniently located in large human habitations. If we need a soul in central Iowa, stat, no way we’re going to go looking for the last remaining population of wild tigers in Bangladesh.

“So the overwhelming majority of your people were farm animals in their past lives.

“But think about how you treat your farm animals. Factory farming. Force fed through tubes so their diet can be precisely controlled. Locked in cages exactly the size of their bodies to prevent them from using their muscles lest the meat become less tender. Separated at birth from their families. Never seeing the sun or the green grass. Pumped full of drugs so they can be packed side-to-side in vast warehouses without infection.

“And then your children are born, and almost from birth they start to go wrong. Stuffing themselves full of food and avoiding exercise. Isolated from their families and each other. Retreating from nature and the open spaces to watch television in dark rooms. Stuffing themselves full of drugs, from alcohol to cocaine, in an attempt to make themselves feel better.

“And your psychiatrists write in their journals about how rates of depression, autism, and attention deficit disorder are increasing by orders of magnitude each generation, and they don’t know why.

“Honestly, sometimes I can’t blame Kali for just wanting to destroy the whole thing and start over. I guess she’ll get her way soon eno—

—oh, look, there’s the Indian restaurant! And it looks delicious!”

And with divine precision the Hindu god Mahaksuryana bowed, did a perfect quarter turn, and stepped through the door. I would have followed, but I was in a hurry, and something warned me to stay away.

I never saw Mahaksuryana again, and honestly that's just fine by me.



# The Character's Complaint

*Originally posted on March 28, 2014*

<https://slatestarcodex.com/2014/03/28/the-characters-complaint/>

I've wiped off the blood and I've cleaned up the rubble  
And most of the burn marks have faded to pink  
I've finally started to save up some cash  
After paying the surgeon, the doc, and the shrink  
The neighbors are letting their kids play outside now  
And even the nightmares are starting to ease  
So if you are reading this, Author, I'm pleading  
Don't write any books on me! No more books! Please!

I don't want to get in a hijack or bombing  
Which seems to be most of the plot of a thriller  
I've noticed that when you say "mystery book"  
You mean "brutal unstoppable serial killer"  
I don't want to be in a romance  
If it ends with divorce from my spouse  
Or trudge off to the stores to buy heavy steel doors  
To zombie-proof all of the gates to my house

I don't want to be in a novel on war  
And be sent forth to die at the edge of the globe  
Though the future sounds swell, I'll stay out of sci-fi  
If it has the words "parasite", "anal", or "probe"  
I don't want to be in dystopian fiction  
And get renamed something like "Janitor Eight"  
I'm far too high class to be happy with fanfic  
And ladies, no slash please — no, honest, I'm straight

To inclusion in works of some authors of note

I object with particular force  
 Solzhenitsyn, Wiesel, Kafka, Salinger, Plath  
 Either Bronte — plus Lovecraft, of course  
 Victor Hugo would make me *le misérable*  
 And George RR Martin inspires some doubt  
 It's not just the fact that he'd probably kill me  
 It's that I would have to wait years to find out

A Rand book would probably help the economy  
 There'd always be jobs in a world of tycoons  
 But I'd have to sit through all those monologues  
 By long-winded lone libertarian loons  
 Neal Stephenson's better, but isn't for me  
 I always found programming hard  
 And although I loved Ender, I'm leftist on gender  
 And boycotting Orson Scott Card

I promise I'm doing my best not to tempt you  
 I've put away plot hooks and tied up loose ends  
 I've found my real parents with DNA testing  
 Confessed all my crushes on all my cute friends  
 I'm staying away from ruined cities and taverns  
 Avoiding emotions like angst and ennui  
 If I find in my home some forgotten old tome  
 I will back away slowly, and let the thing be

I'm not taking actions that might have a Moral  
 Like dissing my elders or mocking the poor  
 I won't undervalue the Power of Love  
 Or disregard friendship 'cause cash matters more  
 I won't sell my cow for a couple of bean plants  
 I won't kill my magic gold-egg laying goose  
 Or challenge the sky, with my fist raised up high  
 Shouting "I AM MORE [ADJECTIVE] EVEN THAN ZEUS!"

My actions don't show We Must Value Diversity  
 They don't provide proof Being Different's Okay  
 I try to avoid Overcoming Adversity  
 Based upon race, gender, class, or Teh Gay



I will not discover The Faith Of A Child  
Is purer than that of priest, rabbi, or lama  
Wherever I'm able, I've sidestepped each fable  
In ways that exclude any lesson or drama

And really, your talents are wasted on fiction  
Why not try your hand at political prose?  
I hear that some papers pay pundits good money  
And blogs are more lucrative even than those  
You could be the guy who gets studies in *Nature*  
Or who writes for the popular press and explains  
The import to clients of breakthroughs in science  
Like how vaccinations won't melt their kids' brains

What if you find yourself thwarted by writer's block  
Hands stained with ink and a face stained with tears?  
Hunching at desks for too long causes joint pain  
I hear carpal tunnel stays with you for years  
The kids these days just play computer games anyway  
Each year the market gets smaller and smaller  
And editors milk you and agents will bilk you  
And publishers only pay cents on the dollar

Our mutual interests align pretty nicely  
You don't want a half-finished draft on the shelf  
And I'd rather not be thrust into a conflict  
With Man, Nature, Culture, The Gods, or Myself  
So go take up dancing, or look at a sunset  
Rekindle the flame with your husband or wife  
Don't write one more letter — we both deserve better  
Put down the damn pen and get on with your life!



# Answer to Job

*Originally posted on March 15, 2015*

<https://slatestarcodex.com/2015/03/15/answer-to-job/>

(With apologies to Jung.)

Job asked: “God, why do bad things happen to good people? Why would You, who are perfect, create a universe filled with so much that is evil?”

Then the Lord spoke to Job out of the whirlwind, saying “WHAT KIND OF UNIVERSE WOULD YOU PREFER ME TO HAVE CREATED?”

Job said “A universe that was perfectly just and full of happiness, of course.”

“OH,” said God. “YES, I CREATED ONE OF THOSE. IT’S EXACTLY AS NICE AS YOU WOULD EXPECT.”

Job facepalmed. “But then why would You also create *this* universe?”

Answered God: “DON’T YOU LIKE EXISTING?”

“Yes,” said Job, “but all else being equal, I’d rather be in the perfectly just and happy universe.”

“OH, DON’T WORRY,” said God. “THERE’S A VERSION OF YOU IN THAT UNIVERSE TOO. HE SAYS HI.”

“Okay,” said Job, very carefully. “I can see I’m going to have to phrase my questions more specifically. Why didn’t You also make *this* universe perfectly just and happy?”

“BECAUSE YOU CAN’T HAVE TWO IDENTICAL INDIVIDUALS. IF YOU HAVE A COMPUTATIONAL THEORY OF IDENTITY, THEN TWO PEOPLE WHOSE EXPERIENCE IS ONE HUNDRED PERCENT SATURATED BY BLISS ARE JUST ONE PERSON. IF I MADE THIS UNIVERSE EXACTLY LIKE THE HAPPY AND JUST UNIVERSE, THEN THERE WOULD ONLY BE THE POPULATION OF THE HAPPY AND JUST UNIVERSE, WHICH WOULD BE LESS GOOD THAN HAVING THE POPULATION OF THE HAPPY AND JUST UNIVERSE PLUS THE POPULATION OF ONE EXTRA UNIVERSE THAT IS AT LEAST SOMEWHAT HAPPY.”

“Hmmmm. But couldn’t You have have made this universe like the happy and just universe except for one tiny detail? Like in that universe, the sun is a sphere, but in our universe, the sun is a cube? Then you would have individuals

who experienced a spherical sun, and other individuals who experienced a cubic sun, which would be enough to differentiate them.”

“I DID THAT TOO. I HAVE CREATED ALL POSSIBLE PERMUTATIONS OF THE HAPPY AND JUST UNIVERSE AND ITS POPULACE.”

“All of them? That would be... a lot of universes.”

“NOT AS MANY AS YOU THINK,” said God. “IN THE END IT TURNED OUT TO BE ONLY ABOUT  $10^{10^{10^{10^{984}}}}$ . AFTER THAT I RAN OUT OF POSSIBLE PERMUTATIONS OF UNIVERSES THAT COULD REASONABLY BE DESCRIBED AS PERFECTLY HAPPY AND JUST. SO I STARTED CREATING ONES INCLUDING SMALL AMOUNTS OF EVIL.”

“Small amounts! But the universe has...”

“I WAS NOT REFERRING TO YOUR UNIVERSE. I EXHAUSTED THOSE, AND THEN I STARTED CREATING ONES INCLUDING IMMENSE AMOUNTS OF EVIL.”

“Oh.” Then: “What, exactly, is Your endgame here?”

“I AM OMNIBENEVOLENT. I WANT TO CREATE AS MUCH HAPPINESS AND JOY AS POSSIBLE. THIS REQUIRES INSTANTIATING ALL POSSIBLE BEINGS WHOSE TOTAL LIFETIME HAPPINESS IS GREATER THAN THEIR TOTAL LIFETIME SUFFERING.”

“I’m not sure I understand.”

“YOUR LIFE CONTAINS MUCH PAIN, BUT MORE HAPPINESS. BOTH YOU AND I WOULD PREFER THAT A BEING WITH YOUR EXACT LIFE HISTORY EXIST. IN ORDER TO MAKE IT EXIST, IT WAS NECESSARY TO CREATE THE SORT OF UNIVERSE IN WHICH YOU COULD EXIST. THAT IS A UNIVERSE CONTAINING EVIL. I HAVE ALSO CREATED ALL HAPPIER AND MORE VIRTUOUS VERSIONS OF YOU. HOWEVER, IT IS ETHICALLY CORRECT THAT AFTER CREATING THEM, I CREATE YOU AS WELL.”

“But why couldn’t I have been one of those other versions instead!”

“IN THE MOST PERFECTLY HAPPY AND JUST UNIVERSE, THERE IS NO SPACE, FOR SPACE TAKES THE FORM OF SEPARATION FROM THINGS YOU DESIRE. THERE IS NO TIME, FOR TIME MEANS CHANGE AND DECAY, YET THERE MUST BE NO CHANGE FROM ITS MAXIMALLY BLISSFUL STATE. THE BEINGS WHO INHABIT THIS UNIVERSE ARE WITHOUT BODIES, AND DO NOT HUNGER OR THIRST OR LABOR OR LUST. THEY *SIT UPON LOTUS THRONES* AND CONTEMPLATE THE PERFECTION OF ALL THINGS. IF I WERE TO UNCREATE ALL WORLDS SAVE THAT ONE, WOULD IT MEAN MAKING YOU HAPPIER? OR WOULD IT MEAN KILLING YOU, WHILE FAR AWAY IN A DIFFERENT UNIVERSE INCORPOREAL BEINGS SAT ON THEIR LOTUS THRONES REGARDLESS?”

“I don’t know! Is one of the beings in that universe in some sense *me*?”

"THERE IS NO OBJECTIVE COSMIC UNEMPLOYMENT RATE."

"Huh?"

"I MEAN, THERE IS NO MEANINGFUL ANSWER TO THE QUESTION OF HOW MANY UNIVERSES HAVE A JOB. SORRY. THAT WILL BE FUNNY IN ABOUT THREE THOUSAND YEARS."

"Let me try a different angle, then. Right now in our universe there are lots of people whose lives aren't worth living. If You gave them the choice, they would have chosen never to have been born at all. What about them?"

"A JOB WHO IS AWARE OF THE EXISTENCE OF SUCH PEOPLE IS A DIFFERENT JOB THAN A JOB WHO IS NOT. AS LONG AS THESE PEOPLE MAKE UP A MINORITY OF THE POPULATION, THE EXISTENCE OF YOUR UNIVERSE, IN ADDITION TO A UNIVERSE WITHOUT SUCH PEOPLE, IS A NET ASSET."

"But that's monstrous! Couldn't You just, I don't know, have created a universe that looks like it has such people, but actually they're just p-zombies, animated bodies without any real consciousness or suffering?"

"..."

"Wait, *did* You do that?"

"I AM GOING TO PULL THE 'THINGS MAN WAS NOT MEANT TO KNOW' CARD HERE. THERE ARE ADVANTAGES AND DISADVANTAGES TO THE APPROACH YOU MENTION. THE ADVANTAGES ARE AS YOU HAVE SAID. THE DISADVANTAGE IS THAT IT TURNS CHARITY TOWARDS SUCH PEOPLE INTO A LIE, AND MYSELF AS GOD INTO A DECEIVER. I WILL ALLOW YOU TO FORM YOUR OWN OPINION ABOUT WHICH COURSE IS MORE ETHICAL. BUT IT IS NOT RELEVANT TO THEODICY, SINCE WHICHEVER COURSE YOU DECIDE IS MORALLY SUPERIOR, YOU HAVE NO EVIDENCE THAT I DID NOT IN FACT TAKE SUCH A COURSE."

"Actually, I do have some evidence. Before all of this happened to me I was very happy. But *in the past couple years* I've gone bankrupt, lost my entire family, and gotten a bad case of boils. I'm pretty sure at this point I would prefer that I never have been born. Since I know I myself am conscious, I am actually in a pretty good position to accuse You of cruelty."

"HMMMMMMMM..." said God, and the whirlwind disappeared.

Then the Lord gave Job twice as much as he had before, and healed his illnesses, and gave him many beautiful children, so it was said that God had blessed the latter end of Job more than his beginning.



# Universal Love, Said the Cactus Person

*Originally posted on April 21, 2015*

<https://slatestarcodex.com/2015/04/21/universal-love-said-the-cactus-person/>

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

“Right,” I said. “I’m absolutely in favor of both those things. But before we go any further, could you tell me the two prime factors of 1,522,605,027, 922,533,360,535,618,378,132,637,429,718,068,114,961,380,688,657,908,494,580,122,963,258,952,897,654,000,350,692,006,139?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

The sea was made of strontium; the beach was made of rye. Above my head, a watery sun shone in an oily sky. A thousand stars of sertraline whirled round quetiapine moons, and the sand sizzled sharp like cooking oil that hissed and sang and threatened to boil the octahedral dunes.

“Okay,” I said. “Fine. Let me tell you where I’m coming from. I was reading [Scott McGreal’s blog](#), which has some [good articles](#) about so-called DMT entities, and mentions how they seem so real that users of the drug insist they’ve made contact with actual superhuman beings and not just psychedelic hallucinations. You know, [the usual](#) Terence McKenna stuff. But in [one](#) of them he mentions a paper by Marko Rodriguez called [A Methodology For Studying Various Interpretations of the N,N-dimethyltryptamine-Induced Alternate Reality](#), which suggested among other things that you could prove DMT entities were real by taking the drug and then asking the entities you meet to factor large numbers which you were sure you couldn’t factor yourself. So to that end, could you do me a big favor and tell me the factors of 1,522,605,027,922,533,360,535,618,378,132,637,429,718,068,114,961,380,688,657,908,494,580,122,963,258,952,897,654,000,350,692,006,139?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

The sea turned hot and geysers shot up from the floor below. First one of wine, then one of brine, then one more yet of turpentine, and we three stared at the show.

“I was afraid you might say that. Is there anyone more, uh, *verbal* here whom I could talk to?”

“Universal love,” said the cactus person.

At the sound of that, the big green bat started rotating in place. On its other side was a bigger greener bat, with a ancient, wrinkled face.

“*Not splitting numbers / but joining Mind,*” it said.

“*Not facts or factors or factories / but contact with the abstract attractor that brings you back to me*

*Not to seek / but to find*”

“I don’t follow,” I said.

“*Not to follow / but to jump forth into the deep*

*Not to grind or to bind or to seek only to find / but to accept*

*Not to be kept / but to wake from sleep*”

The bat continued to rotate, until the first side I had seen swung back into view.

“Okay,” I said. “I’m going to hazard a guess as to what you’re talking about, and you tell me if I’m right. You’re saying that, like, all my Western logocentric stuff about factoring numbers in order to find out the objective truth about this realm is missing the point, and I should be trying to do some kind of spiritual thing involving radical acceptance and enlightenment and such. Is that kind of on the mark?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

“Frick,” I said. “Well, okay, let me continue.” The bat was still rotating, and I kind of hoped that when the side with the creepy wrinkled face came into view it might give me some better conversation. “I’m all about the spiritual stuff. I wouldn’t be here if I weren’t deeply interested in the spiritual stuff. This isn’t about money or fame or anything. I want to advance psychedelic research. If you can factor that number, then it will convince people back in the real — back in my world that this place is for real and important. Then lots of people will take DMT and flock here and listen to what you guys have to say about enlightenment and universal love, and make more sense of it than I can alone, and in the end we’ll have more universal love, and... what was the other thing?”

“Transcendent joy,” said the big green bat.



“Right,” I said. “We’ll have more transcendent joy if you help me out and factor the number than if you just sit there being spiritual and enigmatic.”

*“Lovers do not love to increase the amount of love in the world / But for the mind that thrills*

*And the face of the beloved, which the whole heart fills / the heart and the art never apart, ever unfurled*

*And John Stuart is one of / the dark satanic mills”*

“I take it you’re not consequentialists,” I said. “You know that’s really weird, right. Like, not just ‘great big green bat with two faces and sapient cactus-man’ weird, but like *really* weird. You talk about wanting this spiritual enlightenment stuff, but you’re not going to take actions that are going to increase the amount of spiritual enlightenment? You’ve got to understand, this is like a bigger gulf for me than normal human versus ineffable DMT entity. You can have crazy goals, I expect you to have crazy goals, but what you’re saying now is that you don’t pursue any goals at all, you can’t be modeled as having desires. Why would you *do* that?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

“Now you see here,” I said. “Everyone in this conversation is in favor of universal love and transcendent joy. But I’ve seen the way this works. Some college student gets his hands on some DMT, visits here, you guys tell him about universal love and transcendent joy, he wakes up, says that his life has been changed, suddenly he truly understands what really matters. But it never lasts. The next day he’s got to get up and go to work and so on, and the universal love lasts about five minutes until his boss starts yelling at him for writing his report in the wrong font, and before you know it twenty years later he’s some slimy lawyer who’s joking at a slimy lawyer party about the one time when he was in college and took some DMT and spent a whole week raving about transcendent joy, and all the other slimy lawyers laugh, and he laughs with them, and so much for whatever spiritual awakening you and your colleagues in LSD and peyote are trying to kindle in humanity. And if I accept your message of universal love and transcendent joy right now, that’s exactly what’s going to happen to me, and meanwhile human civilization is going to keep being stuck in greed and ignorance and misery. So how about you shut up about universal love and you factor my number for me so we can start figuring out a battle plan for giving humanity a *real* spiritual revolution?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

A meteorite of pure delight struck the sea without a sound. The force of the blast went rattling past the bat and the beach, disturbing each, then made its way to a nearby bay of upside-down trees with their roots in the breeze and their branches underground.

“I demand a better answer than that,” I demanded.

The other side of the bat spun into view.

*“Chaos never comes from the Ministry of Chaos / nor void from the Ministry of Void*

*Time will decay us but time can be left blank / destroyed*

*With each Planck moment ever fit / to be eternally enjoyed”*

“You’re making this basic mistake,” I told the big green bat. “I honestly believe that there’s a perspective from which Time doesn’t matter, where a single moment of recognition is equivalent to eternal recognition. The problem is, if you only have that perspective for a moment, then all the rest of the time, you’re sufficiently stuck in Time to honestly believe you’re stuck in Time. It’s like that song about the hole in the bucket — if the hole in the bucket were fixed, you would have the materials needed to fix the hole in the bucket. But since it isn’t, you don’t. Likewise, if I understood the illusoriness... illusionality... whatever, of time, then I wouldn’t care that I only understood it for a single instant. But since I don’t, I don’t. Without a solution to the time-limitedness of enlightenment that works from *within* the temporal perspective, how can you consider it solved at all?”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

The watery sun began to run and it fell on the ground as rain. It became a dew that soaked us through, and as the cold seemed to worsen the cactus person hugged himself to stay warm but his spines pierced his form and he howled in a fit of pain.

“You know,” I said, “sometimes I think the *kvithion sumurhe* had the right of it. The world is an interference pattern between colliding waves of Truth and Beauty, and either one of them pure from the source and undiluted by the other will be fatal. I think you guys and some of the other psychedelics might be pure Beauty, or at least much closer to the source than people were meant to go. I think you can’t even understand reason, I think you’re constitutionally opposed to reason, and that the only way we’re ever going to get something that combines your wisdom and love and joy with reason is after we immanentize the eschaton and launch civilization into some perfected postmessianic era where the purpose of the world is fully complete. And that as much as I hate to say it, there’s no short-circuiting the process.”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

“I’m dissing you, you know. I’m saying you guys are so intoxicated on spiritual wisdom that you couldn’t think straight if your life depended on it; that your random interventions in our world and our minds look like the purposeless acts of a drunken madman because that’s basically more or less what they are. I’m saying if you had like five IQ points between the two of you, you could tap into your cosmic consciousness or whatever to factor a number that would do more for your cause than all your centuries of enigmatic dreams and unasked-for revelations combined, and you ARE TOO DUMB TO DO IT EVEN WHEN I BASICALLY HOLD YOUR HAND THE WHOLE WAY. Your spine. Your wing. Whatever.”

“Universal love,” said the cactus person.

“Transcendent joy,” said the big green bat.

“Fuck you,” said I.

I saw the big green bat bat a green big eye. Suddenly I knew I had gone too far. The big green bat started to turn around what was neither its x, y, or z axis, slowly rotating to reveal what was undoubtedly the biggest, greenest bat that I had ever seen, a bat bigger and greener than which it was impossible to conceive. And the bat said to me:

“Sir. Imagine you are in the driver’s seat of a car. You have been sitting there so long that you have forgotten that it is the seat of a car, forgotten how to get out of the seat, forgotten the existence of your own legs, indeed forgotten that you are a being at all separate from the car. You control the car with skill and precision, driving it wherever you wish to go, manipulating the headlights and the windshield wipers and the stereo and the air conditioning, and you pronounce yourself a great master. But there are paths you cannot travel, because there are no roads to them, and you long to run through the forest, or swim in the river, or climb the high mountains. A line of prophets who have come before you tell you that the secret to these forbidden mysteries is an ancient and terrible skill called GETTING OUT OF THE CAR, and you resolve to learn this skill. You try every button on the dashboard, but none of them is the button for GETTING OUT OF THE CAR. You drive all of the highways and byways of the earth, but you cannot reach GETTING OUT OF THE CAR, for it is not a place on a highway. The prophets tell you GETTING OUT OF THE CAR is something fundamentally different than anything you have done thus far, but to you this means ever sillier extremities: driving backwards, driving with the headlights on in the glare of noon, driving into ditches on purpose, but none of these reveal the secret of GETTING OUT OF

THE CAR. The prophets tell you it is easy; indeed, it is the easiest thing you have ever done. You have traveled the Pan-American Highway from the boreal pole to the Darien Gap, you have crossed Route 66 in the dead heat of summer, you have outrun cop cars at 160 mph and survived, and GETTING OUT OF THE CAR is easier than any of them, the easiest thing you can imagine, closer to you than the veins in your head, but still the secret is obscure to you.”

A herd of bison came into listen, and voles and squirrels and ermine and great tusked deer gathered round to hear as the bat continued his sermon.

“And finally you drive to the top of the highest peak and you find a sage, and you ask him what series of buttons on the dashboard you have to press to get out of the car. And he tells you that it’s not about pressing buttons on the dashboard and you just need to GET OUT OF THE CAR. And you say okay, fine, but what series of buttons will *lead to* you getting out of the car, and he says no, really, you need to stop thinking about dashboard buttons and GET OUT OF THE CAR. And you tell him maybe if the sage helps you change your oil or rotates your tires or something then it will improve your driving to the point where getting out of the car will be a cinch after that, and he tells you it has nothing to do with how rotated your tires are and you just need to GET OUT OF THE CAR, and so you call him a moron and drive away.”

“Universal love,” said the cactus person.

“So that metaphor is *totally unfair*,” I said, “and a better metaphor would be if every time someone got out of the car, five minutes later they found themselves back in the car, and I ask the sage for driving directions to a laboratory where they are studying that problem, and...”

“You only believe that because it’s written on the windshield,” said the big green bat. “And you think the windshield is identical to reality because you won’t GET OUT OF THE CAR.”

“Fine,” I said. “Then I can’t get out of the car. I want to get out of the car. But I need help. And the first step to getting help is for you to factor my number. You seem like a reasonable person. Bat. Freaky DMT entity. Whatever. Please. I promise you, this is the right thing to do. Just factor the number.”

“And I promise you,” said the big green bat. “You don’t need to factor the number. You just need to GET OUT OF THE CAR.”

“I can’t get out of the car until you factor the number.”

“I won’t factor the number until you get out of the car.”

“Please, I’m begging you, factor the number!”

“Yes, well, I’m begging you, please get out of the car!”

“FOR THE LOVE OF GOD JUST FACTOR THE FUCKING NUMBER!”

“FOR THE LOVE OF GOD JUST GET OUT OF THE FUCKING CAR!”

“FACTOR THE FUCKING NUMBER!”

“GET OUT OF THE FUCKING CAR!”

“Universal love,” said the cactus person.

Then tree and beast all fled due east and the moon and stars shot south. And the bat rose up and the sea was a cup and the earth was a screen green as clozapine and the sky a voracious mouth. And the mouth opened wide and the earth was skied and the sea fell in with an awful din and the trees were moons and the sand in the dunes was a blazing comet and...

I vomited, hard, all over my bed. It happens every time I take DMT, sooner or later; I’ve got a weak stomach and I’m not sure the stuff I get is totally pure. I crawled just far enough out of bed to flip a light switch on, then collapsed back onto the soiled covers. The clock on the wall read 11:55, meaning I’d been out about an hour and a half. I briefly considered taking some more ayahuasca and heading right back there, but the chances of getting anything more out of the big green bat, let alone the cactus person, seemed small enough to fit in a thimble. I drifted off into a fitful sleep.

Behind the veil, across the infinite abyss, beyond the ice, beyond daath, the dew rose from the soaked ground and coalesced into a great drop, which floated up into an oily sky and became a watery sun. The cactus person was counting on his spines.

“Hey,” the cactus person finally said, “just out of curiosity, was the answer 37,975,227,936,943,673,922,808,872,755,445,627,854,565,536,638,199 times 40,094,690,950,920,881,030,683,735,292,761,468,389,214,899,724,061?”

“Yeah,” said the big green bat. “That’s what I got too.”



# Biodjinnetics

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<https://slatestarcodex.com/2013/06/12/biodjinnetics/>

“In exchange for freeing me from this lamp, you may ask me one question,” said the genie.

“Not three?” I protested.

“Just one,” said the genie.

“What is the cure for cancer?” I asked.

“A compound called oxymercuriphine, found in the venom of the two-toed toad of Toronto,” said the genie. “Cures 100% of all cancers.”

“Huh,” I said. “Thank you. And here I was worrying you were one of those evil genies who would satisfy the letter of the wish while actually being totally useless.”

“Me?” said the genie, as he faded from view. “Never. That molecule is the genuine article and I wish you only the best of luck getting the fifty million dollars or so needed to push it through years of FDA clinical trials.”





# Reverse Psychology

*Originally posted on July 18, 2015*

<https://slatestarcodex.com/2015/07/18/reverse-psychology/>

## I

It all started when I made that phone call.

I was really bad. All the tenure-track positions I'd applied to had politely declined, and I saw my future in academia gradually slipping away from me. Then the night before, my boyfriend had said he thought maybe we should start seeing other people. I didn't even know if we were broken up or not, and at that point I couldn't bring myself to care. I sat on my bed, thinking about things for a while, and finally I called the suicide hotline.

"Hello?" a woman's voice answered on the other side. Somehow, just hearing someone else made me feel about five times better.

"Hello," I said, a little more confidently. "I've been thinking of committing suicide. I need help."

"Okay," she said. "Is there a gun in your house?"

"No."

"All right. The first thing you need to do is get one. Overdosing on pills is common, but it almost never works. You can get a firearm at almost any large sporting goods store, but if there aren't any near you, we can start talking about maybe jumping from a high..."

"What the HELL?" I interrupted, suddenly way more angry than depressed. "You're supposed to @#\$!ing tell me not to do it!"

"This is the suicide hotline," the woman said, now sounding confused. Then, "Are you sure you weren't thinking of the suicide *prevention* hotline?"

"Give me a break! I took a psychology class in undergrad, I know what a suicide hotline is!"

"I'm sorry you seem to be upset. But this is the suicide hotline. It's like how there's the Walk For Breast Cancer, but also the Walk Against Breast Cancer."

“There’s the what? But... I was *in* the Walk For Breast Cancer! I thought...”

“It sounds like you have some issues,” said the woman, politely.

“Ugh,” I said. “Yeah.”

“Do you feel like you need professional help?”

“Yeah.”

“I do have a free clinic with an opening available tomorrow at three PM, would you like me to slot you in for an appointment?”

So you’re probably wondering why in the world I would take an appointment arranged by the suicide hotline that wasn’t a suicide prevention hotline. The answer is — were you even listening? A free clinic? With an appointment available the next day? Normally I was lucky if I found a place with an opening in less than two months and a co-pay that wasn’t completely ruinous. You *bet* I was taking that appointment before someone else snatched it up.

Dr. Trauer’s office looked gratifyingly normal. There was a houseplant, a diagram of the cranial nerves, some Abilify® merchandise, and on the wall one of those Magic Eye stereographic images that resolved into a 3D picture of the human brain. Dr. Trauer himself looked like your average doctor — a little past middle age, a little overweight, a short greying beard. He motioned me to sit down and took the paperwork I’d been filling out.

“Hmmm,” he said, reading it over. “29 years old, postdoc in biochem, recent relationship trouble... mmmm... you did the right thing.”

“In coming here?”

“No, in considering suicide. After getting rejected from a tenure-track position, your life is pretty much over.”

“WHAT?”

“I mean, here you are, hundreds of thousands of dollars in debt, with only one area of expertise, and now you’ve been rejected from it. I can totally see why you might think it’s worth ending it all.”

“But... there are lots of other things I can do! I can get a job in industry! I can work in something else! Even if I can’t find a job right away, I have parents who can help support me.”

“Industry!” Dr. Trauer was having none of it. “A bunch of bloodsuckers. Do you realize how bad work in the private sector is these days? They’ll abuse you and then spit you out, and once you’ve been out of university too long nobody else will want you.”

“Lots of people want biochemists! If I work for a company for a few years, I’ll have more experience and maybe that will make me more attractive to employers! What... what kind of a psychiatrist *are* you, anyway?”

"Cindy didn't tell you?"

"Cindy?"

"The woman on the phone."

"She didn't really tell me anything!"

"Well," said Dr. Trauer. "To answer your question, we're dark side psychiatrists. This is the state's only dark side psychiatry clinic."

"Dark side psychiatry? *Really?*"

"We're a... well, some people say sect, but I like to think of it as more of a guild... dedicated to improving negative mental health. Think of it this way. When you're a hijacked murder-monkey hurtling toward your inevitable death, sanity is a completely ridiculous thing to have. And when the universe is fifteen billion light-years across and almost entirely freezing void, the idea that people should have 'coping skills' boggles the imagination. An emotionally healthy person is a person who isn't paying attention, and our job is to cure them."

"There's more than one of you?"

"Oh, yes. There's a thriving dark side psychiatric community. There are dark side psychopharmacologists — you'd be amazed what a few doses of datura can do to a person. There are dark side psychotherapists who analyze and break down people's positive cognitions. There are dark side child psychiatrists who catch people when they're young, before sanity has had a chance to take root and worsen. And there are dark side geriatric psychiatrists, who go from nursing home to nursing home, making sure that the elderly are not warehoused and neglected at exactly the time it is most important to ensure that stroke or dementia does not protect them from acute awareness of the nearness of death."

"That's awful!" I said.

"Is it? Look where sanity's gotten you. You want to kill yourself, but you don't have the courage. Work with me for ten sessions, and I promise you we can help you *get* that courage."

"You're a @#!\$ing quack," I said. "And if you think killing yourself is so great, how come you haven't done it yourself yet?"

"Who says I haven't?" asked Dr. Trauer.

His hand went to his face, and he plucked out his right eye, revealing an empty void surrounded by the bleached whiteness of bone. I screamed and ran out of the clinic and didn't stop running until I was in my house and had locked the door beside me.

## II

“...and that’s pretty much the whole story, doctor,” she told me. “And then I looked to see if there were any *real* psychiatrists in the area and someone referred me to you.”

“Well,” I said, my face unreadable. “I can certainly see why you’re complaining of, how did you put it, ‘depression and acute stress disorder’?”

“Not so acute anymore. It took me two months to get an appointment at your clinic.”

“Oh,” I said. Then, “Sorry, we’re sort of backed up.” Then, “Okay. We’ve got a lot we have to work on here. Let me tell you how we’re going to do it. We’re going to use a form of therapy that challenges your negative cognitions. We’re going to take the things that are bothering you, examine the evidence for them, and see if there are alternative explanations.”

“What do you mean?” she asked.

“Well,” I said. “It seems to be this Dr. Trauer incident that’s traumatized you a lot. I can see why you would be stressed out. The way you tell it, it sounds absolutely terrifying.”

“You don’t believe me,” she said, not accusatory, just stating a fact.

“I think it would be helpful to examine alternate explanations,” I said. “I’m willing to assume it happened exactly as you tell it. I can see why you would think Dr. Trauer wanted you to commit suicide. But are there any alternative explanations for the same event?”

“I don’t see how there can be,” she said. “He outright said that he thought I should kill myself.”

“Right. But from what you know of psychiatrists and therapy — and you did say you took some classes in undergrad — are there any other reasons he might have said something like that?”

She thought for a second. “Wait,” she told me. “There’s a technique in therapy called **paradoxical intention**. Where you take a patient’s irrational thought, and then defend and amplify it. And then when the patient hears it from someone else, she realizes how silly it sounds and starts arguing against it, and then it’s really hard to keep believing it after you’ve shot it down yourself.”

I nodded. “That’s definitely a therapeutic method, and sometimes a very effective one. Do you have any evidence that this is what Dr. Trauer was doing?”

“Yes! As soon as he said I should commit suicide, I started arguing against him. He told me that if I couldn’t get a tenure track position there would be no other jobs available, and I told him there would be! Then he told me that the

jobs would be terrible and I'd never be able to make a happy life for myself with them, and I argued that I would! That must have been what he was going for!"

She suddenly looked really excited. Then, just as suddenly, the worry returned to her face.

"But then what happened with his eye? I swear I saw him take it right out of the socket."

I nodded. "Can you think of any alternate explanations for that?"

Thinking about it that way, it only took her like five seconds. She slapped her head like she'd been an idiot. "A glass eye. He probably had some kind of injury, had to put in a glass eye, and could take it out any time he wanted. He must have thought it would be a funny gag and didn't realize how traumatized I'd be. Or he wanted to scare me into realizing how much I wanted to live. Or something."

I nodded. "That does sound like a reasonable explanation."

"But... don't people with glass eyes usually have like scar tissue and normal skin behind them? This guy, I swear it was just the bone and this empty socket, like you were seeing straight to his skull."

"You're asking the right questions," I said. "Now think a little more."

"Hmmm," she said. "I guess I was really, really stressed out at the time. And I only saw it for, like, a fraction of a second. Maybe my brain was playing tricks on me."

"That can definitely happen," I agreed.

She looked a lot better now. "I owe you a lot of thanks," she said. "I've only been here for, like, fifteen minutes, and already I think a lot of my stress has gone away. All of this really makes sense. That paradoxical intention thing is actually kind of brilliant. And I can't deny that it worked — I haven't been suicidal since I talked to the guy. In fact... okay, this is going to sound really strange, but... maybe I should go back to Dr. Trauer."

I wrinkled my forehead.

"It's not that I don't like you," she said. "But he had this amazing free clinic, and what he did for me that day... now that I realize what was going on, that was actually pretty incredible."

"Hold on a second," I said.

I left the room, marched up to the front desk, took the directory of medical providers in the area off the shelf, marched back to the room. I started flipping through the pages. It was in alphabetical order... Tang... Thompson... **Tophet**... there we go. Trauer. My gaze lingered there maybe just a second too long, and she asked if I was okay.

“Um, yeah,” I said. “It’s just that he doesn’t — he doesn’t take your insurance. That’s the problem.”

“It’s okay,” she told me. “He said it was a free clinic. So that shouldn’t a problem.”

“Well, uh... the thing is... when you see out-of-network providers, your insurance actually charges an extra fee. Even if the visit itself is free.”

She looked skeptical. “I’ve never heard of that.”

“It’s new. With Obamacare.”

“Really? How high a fee is it?”

“It’s... um... ten thousand dollars. Yeah, I know, right? Thanks, Obama.”

“Wow,” she said. “I definitely can’t afford that. I guess I’ll keep coming here. Not that there’s anything wrong with that. You’ve been very nice. It’s just that... with Dr. Trauer... well... sorry, I’ll stop talking now. Thanks a lot, doctor.” She stood up and shook my hand before heading for the door. “Seriously, I can’t believe how much you’ve helped me.”

No, I thought, as she departed *you can’t*. I told her she was asking the right questions, and she was, but not all of them.

For example, *why would a man with only one working eye have a stereographic Magic Eye image in his office?*

I picked up my provider directory again, stared a second time at the entry for Dr. Trauer. There was a neat line through it in red pen, and above, in my secretary’s careful handwriting, “DECEASED”.

Before returning the directory to the front desk, I took my own pen and added “DO NOT REFER” in big letters underneath.

# The Witching Hour

*Originally posted on November 3, 2013*

<https://slatestarcodex.com/2013/11/03/the-witching-hour/>

On an ordinary evening, Tal Aivon was lively and pleasant. The collection of longhouses and yurts within its tall brick walls shone bright with kerosene — not just torches, real kerosene — and its communal meeting area was noisy with conversation and song. The children would be playing their games, and on the eves of holy days the Lorekeepers would chant their stories of the Lost World, accompanied by lyres and the town’s one decaying gyitar.

Tonight, though, a pall lay on Tal Aivon. The six gates of its tall brick walls were barred and shut, and foreboding warriors dressed in odd combinations of Kevlar and steel armor stood just within them, brandishing their swords. Families locked themselves in their yurts and longhouses, huddled around little kerosene lanterns. In the temple, the priests knelt before the stone idols of St. Christ and St. Mahomet, chanting plaintive prayers for protection.

“I still don’t understand,” Meical Dorn complained, from inside the longest longhouse “what this is all about. None of the wildlings are anywhere nearby — I should know, I’ve came through two hundred miles of forest to get here — and the only three towns in this area are at peace with you. In Great Rabda, even an impending attack couldn’t make us cower inside like this. I have half a mind to think there’s something you’re not telling me, Fin. Something that might... threaten our deal.”

Fin Lerisas, Chief Lorekeeper for Tal Aivon, sighed. “Nothing that would threaten our deal, Meical. Great Rabda has gold. We have sunblessings. Just stay here long enough for our bankers to figure out the price, and you’ll have timers and mathers and lighters of your very own.”

Meical glanced longingly at the Chief Lorekeeper’s own sunblessing, a timer that stood on the shelf of his private room. 1:52 AM gleamed on its face, with an maddeningly smooth red glow unlike sunlight or moonlight or firelight. Yet Meical knew it was sunlight, or something like. He was the Lorekeeper of Great Rabda. The Lorekeepers of Tal Aivon were far wiser than he — how could they

not be with the town's close proximity to ruined Diteroi and its trove of artifacts from the Lost World — but even he knew how sunblessings worked. You took them outside and the blue tiles on their surface fed on sunlight. Then they worked various miracles. Timers would tell you the time far more precisely than any sundial — invaluable in keeping the schedule of sacred prayer decreed by St. Mahomet. Mathers would add and subtract quantities more quickly than the fastest savant. Lighters would shine at night without wood or kerosene.

Meical had no doubt that the Lorekeepers of Tal Aivon — the wisest on the Great Peninsula — knew of still other sunblessings, ones that mighty but lore-deficient Great Rabda had never heard of. He himself would be happy with anything — even the meanest timer. Of all the millions of wonders built by the Lost World, only the sunblessings still worked, and they were in fiendishly short supply. While lore-rich Tal Aivon had a timer upon each of its six gates, Great Rabda, for all its bountiful gold and grain, had not a single sunblessing to call its own. As its Lorekeeper, it would aid his status immensely if this trade mission was successful and he could bring something back to demonstrate the power of the Lost World and, incidentally, his own importance as keeper of its Lore.

But even his greed for power did not override his concern for his own safety. “I’m serious, Fin. I want to know what’s going on. I can’t deal with a city that won’t even tell me why it’s on high alert.”

Fin Lerisas, Chief Lorekeeper of Tal Aivon and wisest in ancient matters on the whole Great Peninsula, gave another sigh. “If you were not a Lorekeeper yourself, I would not sure such secrets with a foreigner. But if it threatens the deal, very well. Only know that you will be no happier with this knowledge, and that you may not sleep quite as soundly on autumn nights from now on.”

Meical gave a nod, indicating he wanted the old man to continue.

“In Great Rabda you have no sunblessings, and so you must keep the time like wildlings, by watching the course of the sun. Here in Tal Aivon we have six timers, one on each of the city gates, and so everyone down to the meanest peasant knows the time, down to the second. To most, they check the time when they enter the city, and the time when they leave the city, and they never think any more of it. We Lorekeepers are more astute, but not infinitely so. And so it was only forty years ago, in the time when my uncle Derech was Chief Lorekeeper, that we noticed” (and here his voice changed to a whisper) “that *there is something wrong with Time*.”

“The stars,” he continued “sometimes match the time as told by the timers, and sometimes they do not. At first we thought the flaw was in the heavens themselves, so perfect are the devices of the Lost World. But this so discomfited



my uncle that for three months he sat in front of this very timer, handing it off to an acolyte only when he slept. And one night, his watch bore fruit.”

“What happened?” asked Meical, breathlessly.

“Time moved backwards,” said Fin.

“Impossible,” said Meical.

“It was on this very night,” said Fin. “Time, which three hundred sixty four days of the year moves only in one direction, suddenly jumped backwards. And you yourself will witness it.”

He pointed to the timer on his shelf, which now read 1:59 AM. Its red glow suddenly looked unfriendly, even eerie. Even though Meical knew it had to be sunlight at its root, it held none of the wholesomeness of the sun.

And then it changed. 1:59 turned to 1:00.

Meical gasped, and his fingers instantly formed the cross of St. Jesus and then the crescent of St. Mahomet. “Madness!” he whispered.

“Something,” said Fin, “is wrong with this night. It is not always this night — it can come as early as three days before, or as late as three days after. My uncle worked out the formula after several years. But every year, it happens. Time jumps backwards.”

“But why?” asked Meical. “Why would the gods do such a thing? Why would they break the symmetry of the True Time and the heavens?”

“That’s the worst part,” said Fin. “When I was younger, I looked over my uncle’s formula — the one for calculating the day when the time skip would happen — and found what he had missed. The day of the time skip is fixed to the seven day calendar of the Lost World. To the ancients, it would always occur on the same day of the week. Sunday. Their holy day.”

Meical felt his blood run cold. “That’s... some coincidence.”

“Perhaps,” said Fin. “But I don’t think it *is* a coincidence. The gods are just. They would not play with Time as children play with blocks, picking one up here, then putting it down far away. I think the ancients of the Lost World, the ones who could build the great glass towers, the ones who manufactured sunblessings, the ones who made Diteroi-That-Was — I think they took their magic and threw it against time, and broke it. I think they wanted to become lords of time itself.”

“But they failed,” guessed Meical.

“They created a single hour,” said Fin. “Of the nine thousand hours in a year, all but one were made by the gods, but one was made by Man. What stopped them from creating more, from creating an infinite number of hours, from becoming immortal by arresting the progression of Time? We will never know. But it is my belief that when they saw what men had done, the gods

stopped them before they could do worse. Meical, I believe that is how the Lost World ended. A last ditch effort by the gods to save Time itself from the hubris of Man.”

Meical was silent. For all their wisdom, none of the Lorekeepers claimed to know how the Lost World ended. Surely the gods had pulverized it for some offense, but what sin could have been so dire as to doom those magnificent glass towers, those great black roads as smooth as water? Meical looked at the clock, gleaming 1:03 AM, and knew. Knew in his heart that Fin was right.

“There is a day in the very early springtime,” said Fin, “when an hour disappears. The gods are stingy. They would not grant the ancients their victory. What they did with that hour in springtime, I do not know. But their message is clear.”

Meical shuddered again. Like all the inhabitants of Great Rabda, he had told the time with the sun and the stars. But it had always been an approximation, not the to-the-second True Time displayed on the six gates of Tal Aivon. And so in their ignorance they had missed no fewer than two violations of Time, and it had fallen to the people of Tal Aivon alone to guard these terrible secrets.

“You ask why we extinguish our fires and pray this night. Nine thousand hours in the year were made by the gods, but one was made by Man. I cannot help but wonder what walks abroad, during the hour no god made. I cannot help but wonder what spirits awake on the anniversary of the old world’s death. When time itself stands stagnant, what sorts of things breed within it? I prefer not to think about such things. That is why for the past forty years, ever since my discovery, I have knelt with the priests in the temple, and joined in their prayers. With an honored guest such as yourself here, I thought to entertain you instead, to avoid worrying you. Now I see that thought was vain. Will you come to the temple and pray with me?”

And so on the longest night of the year, Fin Lerisas, Chief Lorekeeper of Tal Aivon, and Meical Dorn, Lorekeeper of Great Rabda, knelt in the temple and prayed to St. Jesus and St. Mahomet that time continue, that 1:59 AM be followed by 2:00 AM just as it always had in the past, and that the people be forgiven the sins of the Lost World, which had dared to change Time itself. And lo, at the appointed hour the six clocks on the six gates of Tal Aivon showed 2 AM, and the people rejoiced, and the kerosene lights were lit and the city of Tal Aivon was lively and pleasant once again.

Three days later, Meical Dorn left Tal Aivon minus the gold he had brought but with a sunblessing of his own, a beautiful slate-gray mather that would have the engineers of Great Rabda dancing with glee. They had offered him

a timer instead, a beautiful digital timer that even played short tunes at different hours, but Meical had refused. He bore a secret that need not trouble the people of Great Rabda. They would have a mather, and calculate things lightning-quick, and never know that there was a flaw in Time that even the gods themselves could not resolve.

But until the day he died, every so often on chill autumn nights Meical Dorn would look up at the stars and shudder.



# Asches to Asches

*Originally posted on June 3, 2014*

<https://slatestarcodex.com/2014/06/03/asches-to-asches/>

You wake up in one of those pod things like in *The Matrix*. There's a woman standing in front of you, wearing a lab coat, holding a clipboard.

"Hi," she says. "This is the real world. You used to live here. We erased your memories and stuck you in a simulated world for a while, like in *The Matrix*. It was part of a great experiment."

"What?" you shout. "My whole life, a lie? How dare you deceive me as part of some grand 'experiment' I never consented to?"

"Oh," said the woman, "actually, you did consent, in exchange for extra credit in your undergraduate psychology course." She hands you the clipboard. There is a consent form with your name on it, in your handwriting.

You give her a sheepish look. "What was the experiment?"

"You know families?" asks the woman.

"Of course," you say.

"Yeah," says the woman. "Not really a thing. Like, if you think about it, it doesn't make any sense. Why would you care more for your genetic siblings and cousins and whoever than for your friends and people who are genuinely close to you? That's like racism — but even worse, at least racists identify with a group of millions of people instead of a group of half a dozen. Why should parents have to raise children whom they might not even like, who might have been a total accident? Why should people, motivated by guilt, make herculean efforts to "keep in touch" with some nephew or cousin whom they clearly would be perfectly happy to ignore entirely?"

"Uh," you say, "not really in the mood for philosophy. Families have been around forever and they aren't going anywhere, who cares?"

"Actually," says the woman, "in the real world, no one believes in family. There's no such thing. Children are taken at birth from their parents and given to people who contract to raise them in exchange for a fixed percent of their future earnings."

“That’s monstrous!” you say. “When did this happen? Weren’t there protests?”

“It’s always been this way,” says the woman. “There’s *never* been such a thing as the family. Listen. You were part of a study a lot like the [Asch Conformity Experiment](#). Our goal was to see if people, raised in a society where everyone believed X and everything revolved around X, would even be *capable* of questioning X or noticing it was stupid. We tried to come up with the stupidest possible belief, something no one in the real world had ever believed or ever seemed likely to, to make sure that we were isolating the effect of conformity and not of there being a legitimate argument for something. So we chose this idea of ‘family’. There are racists in our world, we’re not perfect, but as far as I know none of them has *ever* made the claim that you should devote extra resources to the people genetically closest to you. That’s like a *reductio ad absurdum* of racism. So we got a grad student to simulate a world where this bizarre idea was the unquestioned status quo, and stuck twenty bright undergraduates in it to see if they would conform, or question the premise.”

“Of course we won’t question the premise, the premise is...”

“Sorry to cut you off, but I thought you should know that every single one of the other nineteen subjects, upon reaching the age where the brain they were instantiated in was capable of abstract reason, immediately determined that the family structure made no sense. One of them actually deduced that she was in a psychology experiment, because there was no other explanation for why everyone believed such a bizarre premise. The other eighteen just assumed that sometimes objectively unjustifiable ideas caught on, the same way that everyone in the antebellum American South thought slavery was perfectly natural and only a few abolitionists were able to see through it. Our conformity experiment *failed*. You were actually the only one to fall for it, hook line and sinker.”

“How could I be the only one?”

“We don’t know. Your test scores show you’re of just-above-average intelligence, so it’s not that you’re stupid. But we did give all participants a personality test that showed you have very high extraversion. The conclusion of our paper is going to be that very extraverted participants adopt group consensus without thinking and can be led to believe anything, even something as ridiculous as ‘family’ ”.

“I guess... when you put it like that it is kind of silly. Like, my parents were never that nice to me, but I kept loving them anyway, liking them even more than other people who treated me a lot better — and god, I even gave my mother a “WORLD’S #1 MOM” mug for Mother’s Day. That doesn’t even

make sense! I... but what about the evolutionary explanation? Doesn't evolution say we have genetic imperatives to love and support our family, whether they are worthy of it or not?"

"You can make a just-so story for *anything* using evolutionary psychology. Someone as smart as you should know better than to take them seriously."

"But then, what *is* evolution? How did animals reproduce before the proper economic incentives were designed? Where did..."

"Tell you what. Let's hook you up to the remnemonizer to give you your real memories back. That should answer a lot of your questions."

A machine hovering over you starts to glow purple. "This shouldn't hurt you a bit..."

## §

You wake up in one of those pod things like in *The Matrix*. There's a woman standing in front of you, wearing a lab coat, holding a clipboard.

"Hi," she said. "There's no such thing as virtual reality. I hypnotized you to forget all your memories from the past day and to become very confused. Then I put you in an old prop from *The Matrix* I bought off of eBay and fed you that whole story."

"What?" you shout. "You can't just go hypnotizing and lying to people without their consent!"

"Oh," said the woman, "actually, you did consent, in exchange for extra credit in your undergraduate psychology course." She hands you the clipboard. There is a consent form with your name on it, in your handwriting. "That part was true."

You give her a sheepish look. "Why would you do such a thing?"

"Well," said the woman. "You know the Asch Conformity Experiment? I was really interested in whether you could get people to abandon some of their most fundamental beliefs, just by telling them other people believed differently. But I couldn't think of a way to test it. I mean, part of a belief being fundamental is that you already *know* everyone else believes it. There's no way I could convince subjects that the whole world was against something as obvious as 'the family' when they already know how things stand."

"So I dreamt up the weird 'virtual reality' story. I figured I would convince subjects that the real world was a lie, and that in some 'super-real' world supposedly *everybody* knew that the family was stupid, that it wasn't even an idea *worth considering*. I wanted to know how many people would give

up something they've believed in for their entire life, just because they're told that 'nobody else thinks so'".

"Oh," I said. "Interesting. So even our most cherished beliefs are more fragile than we think."

"Not *really*," said the woman. "Of twenty subjects, you were the only person I got to feel any doubt, or to express any kind of anti-family sentiment."

"Frick," you say. "I feel like an idiot now. What if my mother finds out? She'll think it's her fault or something. God, she'll think I don't love her. People are going to be talking about this one *forever*."

"Don't worry," says the woman. "We'll keep you anonymized in the final data. Anyway, let's get you your memories back so you can leave and be on your way."

"You can restore my memories?" you say.

"Of course. We hypnotized you to forget the last day's events until you heard a trigger word. And that trigger is..."

## §

You wake up in one of those pod things like in *The Matrix*. There's a woman standing in front of you, wearing a lab coat, holding a clipboard.

"Hi," she says. "Hypnosis is a pseudoscience and doesn't work. It was the virtual reality one, all along."

"Wut," you say.

"I mean, the first story was true. All of your memories of living with your family and so on are fake memories from a virtual world, like in *The Matrix*. The concept of 'family' really is totally ridiculous and no one in the real world believes it. All the stuff you heard first was true. The stuff about hypnosis and getting a prop from *The Matrix* off eBay was false."

"But... why?"

"We wanted to see exactly how far we could push you. You're our star subject, the only one whom we were able to induce this bizarre conformity effect in. We didn't know whether it was because you were just very very suggestible, or whether because you had never seriously considered the idea that 'family' might be insane. So we decided to do a sort of... crossover design, if you will. We took you here and debriefed you on the experiment. Then after we had told you how the world really worked, given you all the mental tools you needed to dismiss the family once and for all, even gotten you to admit we were right — we wanted to see what would happen if we sent you back. Would you hold on to your revelation and boldly deny your old society's weird



prejudices? Or would you switch sides again and start acting like family made sense the second you were in a pro-family environment?"

"And I did the second one."

"Yes," says the woman. "As a psychologist, I'm supposed to remain neutral and non-judgmental. But you've got to admit, you're pretty dumb."

"Is there an experimental ethics committee I could talk to here?"

"Sorry. Experimental ethics is another one of those obviously ridiculous concepts we planted in your simulation to see if you would notice. Seriously, to believe that the progress of science should be held back by the prejudices of self-righteous fools? That's almost as weird as thinking you have a... what was the word we used... 'sister'."

"Okay, look, I realize I may have gone a little overboard helping my sister, but the experimental ethics thing seems important. Like, what's going to happen to me now?"

"Nothing's going to happen. We'll keep all your data perfectly anonymous, restore your memories, and you can be on your way."

"Um," you say. "Given past history, I'm... actually not sure I want my memories restored." You glare at the remnemonizer hovering above you. "Why don't I just..."

The woman's eyes narrow. "I'm sorry," she says. "I can't let you do that." The machine starts to glow.

## §

You wake up in one of those pod things like in *The Matrix*. There's a woman standing in front of you, wearing a lab coat, holding a clipboard.

By your count, this has happened three hundred forty six times before.

There seem to be two different scenarios. In one, the woman tells you that families exist, and have always existed. She says she has used hypnosis to make you believe in the other scenario, the one with the other woman. She asks you your feelings about families and you tell her.

Sometimes she lets you go. You go home to your mother and father, you spend some time with your sister. Sometimes you tell them what has happened. Other times you don't. You cherish your time with them, while also second-guessing everything you do. *Why* are you cherishing your time with them? Your father, who goes out drinking every night, and who has cheated on your mother more times than you can count. Your mother, who was never there for you when you needed her most. And your sister, who has been good to you, but no better than millions of other women would be, in her position. Are

they a real family? Or have they been put there as a symbol of something ridiculous, impossible, something that has never existed?

It doesn't much matter. Maybe you spend one night with them. Maybe ten. But within a month, you are always waking up in one of those pod things like in *The Matrix*.

In the second scenario, the woman tells you there are no families, never have been. She says she has used virtual reality to make you believe in the other scenario, the one with the other woman. She asks you your feelings about families and you tell her.

Sometimes she lets you go. You go to a building made of bioplastic, where you live with a carefully chosen set of friends and romantic partners. They assure you that this is how everyone lives. Occasionally, an old and very wealthy-looking man checks in with you by videophone. He reminds you that he has invested a lot of money in your upbringing, and if there's any way he can help you, anything he can do to increase your future earnings potential, you should let him know. Sometimes you talk to him, and he tells you strange proverbs and unlikely business advice.

It doesn't matter. Maybe you spend one night in your bioplastic dwelling. Maybe ten. But within a month, you are always waking up in one of those pod things like in *The Matrix*.

"Look," you tell the woman. "I'm tired of this. I know you're not bound by any kind of experimental ethics committee. But please, for the love of God, have some mercy."

"God?" asks the woman. "What does that word mean? I've never... oh right, we used *that* as our intervention in the prototype experiment. We decided 'family' made a better test idea, but Todd must have forgotten to reset the simulator."

"It's been three hundred forty six cycles," you tell her. "Surely you're not learning anything new."

"I'll be the judge of that," she says. "Now, tell me what you think about families."

You refuse. She sighs. Above you, the remnemonizer begins to glow purple.

## §

You wake up in one of those pod things like in *The Matrix*. There's a purple, tentacled creature standing in front of you, wearing a lab coat, holding a clipboard.

"Hi," it says. "Turns out there's no such thing as humans."

You refuse to be surprised.

"There's only us, the 18-tkenna-dganna-07."

"Okay," you say. "I want answers."

"Absolutely," says the alien. "We would like to find optimal social arrangements."

"And?"

"And I cannot tell you whether we have families or not, for reasons that are to become apparent, but the idea is at least sufficiently interesting to have entered the space of hypotheses worth investigating. But we don't trust ourselves to investigate this. It's the old Asch Conformity Problem again. If we have families, then perhaps the philosophers tasked with evaluating families will conform to our cultural norms and decide we should keep them. If we do not, perhaps the philosophers will conform and decide we should continue not to. So we determined a procedure that would create an entity capable of fairly evaluating the question of families, free from conformity bias."

"And that's what you did to me."

"Yes. Only by exposing you to the true immensity of the decision, without allowing you to fall back on what everyone else thinks, could we be confident in your verdict. Only by allowing you to experience both how obviously right families are, when you 'know' they are correct, and how obviously wrong families are, when you 'know' they are incorrect, could we expect you to garner the wisdom to be found on both sides of the issue."

"I see," you say, and you do.

"Then, O purified one," asks the alien, "tell us of your decision."

"Well," you say. "If you have to know, I think there are about equally good points on both sides of the issue."

"Fuck," says the 18-tkenna-dganna-07.



# The Study of Anglophysics

*Originally posted on April 3, 2014*

<https://slatestarcodex.com/2014/04/03/the-study-of-anglophysics/>

## I

Dear Dr. McCord:

Seven years ago, our research staff read with interest your work on Berkeleyan idealism. We were particularly fascinated by your seemingly outrageous claim that it might be possible for individuals to imagine mental worlds so strongly that they would take on a reality of their own.

At the time, as our laboratory had an interest in novel solutions to the overpopulation problem, we embarked upon a test project to see whether a parallel world could be imaged and then colonized by citizens from our own dimension. Using advanced science you could not possibly comprehend, we came up with a practical implementation of your idea. Dr. Michael Adwell, whom I believe you met during your time in Oxford, volunteered to enter the device we had constructed as our first research subject. We very briefly imaged an alternate world based on the contents of Dr. Adwell's mind before the good doctor unfortunately had a grand mal seizure. He was disconnected from the device and rushed to the hospital, where he passed away several hours later.

Two years ago we revisited some of our calculations on the project and determined, to our surprise, that the world Dr. Adwell had created might still exist in some sense; that it had somehow managed to sustain itself separate from the doctor's mental activity. We worked feverishly to construct a device that might let us interact with his imaged world. Six months ago we succeeded. The computational demands of the machine were immense, but after throwing the remainder of our budget for the year at the Kyoto Supercomputing Laboratory, we were able to rent enough processing power to translate myself and Dr. Lachlan Fairchild into the imaged world, which we dubbed "Adwellia" after our late colleague. Our superiors informed us that when the next fiscal year

rolled around in four months, there would be enough money in the budget to translate us back home.

## II

On first arrival, Adwellia seemed much like home. We landed on the shores of a small lake in what seemed to be a wooded area. Since it was getting dark, we soon set to pitching camp for the night. Our first unpleasant surprise was that the kerosene heater we had brought with us wouldn't work, leaving us cold and disheartened. Lachlan collected some logs to build a fire, but our matches didn't seem to work either. I remembered the seventh page of your paper, where you had posited that an imaged world would run on the same physics of our own world, since it would be bound by the expectations of the imager. Dr. Adwell had certainly understood enough chemistry to know that matches should start fires, but it seemed one of our most basic predictions had already failed.

I will not say whether we were more motivated by curiosity or by the bitter cold, but we tried dozens of different branches — small, large, young and green, old and rotting — and everything from dousing them in kerosene to the old-fashioned method of rubbing sticks together to create friction.

Finally, I succeeded in getting some branches from an old fir tree to alight. In relief, the two of us huddled close to the fire. But our curiosity was only heightened when we found the area near the fire to be unmistakably *colder* than the surrounding air. Here our chill overcame our scientific spirit, and we decided to deal with the problem in the morning. We got into our too-thin thermal sleeping bags and passed a miserable and freezing night.

When we awoke, the fire had gone out, and in its place stood a pile of hats — twenty of them, to be precise. I would have called them fedoras, although Lachlan said the particular style was more popularly known as a Homburg. We debated taking the hats, but we had been thoroughly spooked. Instead we picked up our camp and journeyed south, where it looked like the wood was beginning to thin out.

Around midday we spotted smoke, and dared to hope we were coming upon a settlement. By evening our guess was confirmed, and we saw a village of conical adobe huts. We prepared to gesture our request to trade trinkets for lodging to the inhabitants — who were far too dark skinned to be European but who did not quite pattern-match to my memories of any particular human race. Imagine our surprise when we found they spoke English — though with

abominable grammar. The headman introduced himself as Somon, and was all too happy to accept our trinkets in exchange for a nice warm hut to spend the night in.

We endeavored to learn more about these people in the morning, but by this time were tired enough to call it a night. We could not help inspecting the heating mechanism in our room, which seemed to be a mud bowl in which sheaves of wheat, small rocks, and little mud figurines that looked like people had been placed. Totally absent any visible mechanism, the setup was emitting heat — and what was more, a ball set in a track along the edge of the bowl moved continuously around in what seemed to all the world to be perpetual motion, making an annoying crackling sound as it passed over little leaves set in the rim. We had only a little time to exchange theories before falling into a deep sleep.

The next morning, the bowl was no longer warm, the ball had stopped moving, and the objects within had apparently transmogrified into a miniature wheelbarrow. This was strange magic.

The villagers were already up and about, so we found Somon and tried to get some better conversation in.

“We are scientists,” we told him “from far away, looking to gain a better understanding of how things work here.”

“Here in Mogonaw?” asked Somon, using what we later found was the name of the village. “Not well.” He smiled, showing very pearly teeth.

“We were hoping to set up a laboratory — a few metal huts and a big machine — maybe on the outskirts of town. We would pay you for food, maybe for help with certain things. We have many tools to trade, and lots of gold and metal.” Not exactly true — what we had was a portable nanofactory, translated in with us as an easier alternative to bringing supplies. But we could get tools or transmute elements pretty quickly.

“Is of course,” said Somon, with the delight of someone who had stumbled entirely by accident into a beneficial arrangement. “What will you be needing?”

“Well the first thing,” interrupted Lachlan, “is we wanted to know how your heating device works. The one with the wheat and the rocks. It was new to us.”

“You not have this in your village?” said Somon, with a frown. “Is not obvious?”

“No,” I said. “Where we come from, it’s not obvious at all.”

Somon brightened. “Your village,” he declared “not know true names!” He picked up a rock from the ground. “True name of this is... rock.”

We both nodded, mystified.

He grabbed a sheaf of wheat from a passing villager, who gave him a glare. “True name,” he said, “is... wheat.”

He said it with the same mystical intonation with which one of our colleagues back at the laboratory would announce a particularly earth-shattering result.

“Yes, okay,” said Lachlan, kind of miffed. “I actually think we do know true names of things. It’s the same in our language.”

Now it was Somon’s turn to be mystified. “Then... where is confusion?”

“The heating device,” said Lachlan, narrowing his eyes. “How does it work?”

“Is obvious!” said Somon, like we were idiots. “Wheat and rock and art become work and heat and cart. The work push little ball around. Then ball make noise, continuing reaction.”

“But...” I interjected, because it looked like Lachlan wanted to grab the headman and wring his neck “*why* do the wheat and rock and art become work and heat and cart.”

“Is true names” said Somon, and shrugged.

“Holy shit,” said Lachlan, at exactly the instant when I remained just as confused as I had been before. I stared at him.

“Holy shit,” Lachlan repeated. “This world fucking runs on anagrams. English language anagrams.”

Wittgenstein once said that the limits of our language are the limits of our world. Some say that mathematics is the language of God. Maybe that was why our world ran on math. Well, English had been the language of Dr. Adwell. It had been the lens through which he made sense of reality.

Maybe our hypothesis that his imaged world would run on the same physics of our own had been premature.

What if his world ran on English?

“The fire!” said Lachlan, who as usual was a step ahead of me. “Fir branches and heat. Fir plus heat becomes fire plus hat. So it removed heat from the atmosphere, and created fire and a hat.”

“Twenty hats,” I reminded him.

Lachlan was already deep in thought. “It’s all stoichiometry,” he started saying, almost faster than I could follow. “In our world, water is  $\text{H}_2\text{O}$ . H–O–H. Here, a fir tree has to be literally made of F–I–R. Twenty six letter-elements, forming a near-infinite amount of word-molecules. Suppose we burned three kilograms of fir branches... don’t know the molar weight here, but suppose each letter weighs the same and there’s one mole per kilogram, just bear with me. That’s one mole each of F, I, and R. So it must have absorbed some sort



of four mole equivalent amount of heat... whatever that means... and then spit out three moles of hats and four moles of fire. Three moles of hats in this system would be three kilograms of hats, that would mean each hat weighs 150 grams... it all checks out! Somon! Quick! Show us how you make something else!"

Somon looked at him. The headman seemed as confused as I was, but for different reasons.

"Make... what?" he asked.

"I don't know. Clothes, tools, anything."

"My daughter Genea live in here," he said, gesturing to a hut on the outskirts of town with some smoke coming out of it. "She is weaver."

The "weaver" actually seemed to be performing some sort of complicated chemical reaction. She was holding beets over a cauldron that was bubbling up into a primitive fume hood, then throwing them into what seemed like a vat of tar. Water was running out a hole in one side, and on the other, a roll of cloth was getting steadily longer.

This time I got it before Lachlan. "Chlorine," I said. "Chlorine plus beets plus tar becomes cloth plus brine plus tears."

"That's not right," said Lachlan. "You're missing an 'e'".

"No I'm not," I said. "It consumes twice as much tar as chlorine or beets, and produces twice as many tears as brine or cloth."

"I think," said Lachlan, "that we had better get our laboratory set up sooner rather than later."

### III

This we did, at record speed. Not wanting to frighten the villagers — or expose ourselves to prying eyes — we set ourselves a kilometer south of town, on a cape overlooking a great sea. On the headlands of the cape was a small hill from which you could see for miles, and there we completed the week-or-so's work of getting the nanofactory up and running. Its first job was to extrude us two aluminum Quonset huts, which became our homes away from home.

From our little encampment the ocean stretched on as far as we could see. I wondered if there were other continents on this world — figuring out its size really should have been one of our first priorities. But we were too fascinated by this world's weird linguistic elements and reactions — anglophysics, we dubbed them — to properly investigate anything else.

The first and most obvious question was why everything wasn't reacting all the time. How come every time someone touched a rock, the skin + rock didn't become corks + ink? Just the air alone should have destroyed a wide variety of objects.

("Oh, come on," I told Lachlan. "The air doesn't count". Lachlan had then gone on to prove me wrong by getting the iron tools we had brought to rust, then proving the rust happened faster in moist air, and air that was full of dust particles. "AIR plus IRON plus DUST," he told me "equals RUST plus IONS plus ARID. Things aren't rusting in this world because of oxidation. As long as it can suck dust and moisture from the air, it's rusting by Crazy Anagram Logic." So the air definitely counted.)

The first thing we discovered was that nature abhorred non-words. AIR and DUST wouldn't react on their own to become RUST and IA, because IA wasn't a thing.

"What about AI?" asked Lachlan. "Why not rust plus an intelligent computer?"

At the time, my answer was "Shut up! The world might hear you!" I would later learn this was not nearly as funny as I thought.

But at the time, we made quick progress. Simple materials and short words seemed to be most stable, with complicated or abstract concepts rarely forming spontaneously — which, at least, answered our AI problem. And reactions usually wouldn't happen at all without sound, which seemed to play the same role in this world that heat did in our own. Lachlan had suspected this almost from the beginning — that the crackling leaves underneath the ball had provided the sound-energy to continue fueling the reaction that kept us warm that first night. But it wasn't until we heard the cacophony of a village festival that we knew we were on the right track.

"WHAT ARE YOU DOING??" I had yelled at Somon, over the din of drums and cymbals and screaming villagers.

"MAKING BEER!!!" Somon answered.

It had turned out that the villagers used pee and bran to produce beer and pans, but that the reaction went unpleasantly slowly unless they shouted it along. The shouting was, of course, egged on by the beer they had already produced, which sort of made it an autocatalytic reaction if you squinted. They offered us some of their beer, but even though I knew things worked differently here my standards were a little too high to drink beer *literally* made of pee and so we returned to the lab. On our trip back, Lachlan pointed out that all of the villagers' iron tools had been carefully taken inside during the festival, so that the noise would not cause them to rust.

Our next big discovery was a week later. I woke up at 7 AM with Lachlan pounding on the door of my aluminum hut.

“OMAR!” he was shouting. “TAKE A LOOK AT THIS!”

Sitting on his palm was a one inch tall man, naked and hairless, looking terrified. He looked like he would have run off if there was anywhere to run to.

“What in the...?”

“I found a volcanic vent, up in the hills to the west. There was a source of methane. I broke it down into HEAT and MEN. But there wasn’t enough MEN to form someone full sized. So I got this.”

“Lachlan, you’ve got to help him!”

Lachlan gave a grunt, as if annoyed to be reminded of the ethical implications of his work. “How?”

“Can you speak language?” I asked the little man on Lachlan’s palm.

In response, the man screamed. I took that as a no.

So I dragged Lachlan down to the village, where I woke up an annoyed Somon. “Somon,” I said. “We found a way to break methane into...”

Somon’s eyes went wide. Then he got angry. “No methane!” he said. “Is taboo! Will...”

He saw the homunculus in Lachlan’s palm. With a deft motion belying his age, he yanked the little creature away from Lachlan and snapped its neck. I gasped. Lachlan looked annoyed.

“Is TABOO!” shouted Somon, with an anger I hadn’t seen in him before. “These things! Not men! No speech! No mind! Must not make! Little man is taboo! Methane is taboo! If you make little man, no longer stay with us!”

I calmed him down, promised we wouldn’t be doing any more experiments with methane, said we were new here, didn’t know what we were doing. I asked him for more advice, asked him about any other taboos. He seemed irritated, assumed we should know what they were, seemed to think less of us with each question indicating our ignorance. Finally we gave up and made the long trek back to our laboratory.

Our next few weeks of experiments were less bloody, but still exciting. Suppose we took a mop and the guts of an animal, and shouted at them until MOP + GUT reacted to become POT + GUM. Would the pot be the cooking implement, or would it be marijuana? For that matter, why shouldn’t it be a top, the child’s toy? Why shouldn’t the gum form a mug, fit to drink coffee from?

In our first experiment, we surrounded our apparatus with pans and food, and were unsurprised to find we ended up with cooking implements. We repeated the experiment, but this time surrounding the apparatus with bongs,

tobacco, and other drug paraphernalia — this time we got marijuana. We wanted to get a playful child to see if we could produce tops, but news of our work with methane had gotten out and spooked the villagers, and they were understandably unwilling to let us borrow one of their children.

The third experiment was in my opinion the key to this entire process. This time we surrounded the apparatus with pans and food, but both Lachlan and I concentrated very very hard on marijuana, and talked about marijuana with each other while the loudspeaker the nanofactory had extruded blasted sound at the reactants, and sure enough, we got marijuana.

Somehow our expectations were guiding the physics in a way that the letters themselves couldn't. I started to wonder what had become of poor Dr. Adwell. Was the god of this world a deist, who had created it shortly before dying in a hospital ICU in a very different planet? Or was he in some sense still here, still actively guiding things?

The reaction that rusted iron started to seem more and more suspicious. What about that ARID? In our experiments, making adjectives had been almost impossible, requiring more sound catalysis than any noun we had encountered so far. But ARID seemed to form of its own accord. What if Adwell somehow remembered that iron was supposed to rust, and *privileged* that reaction as the sort of thing that ought to go on? What if the reason everything didn't implode upon itself was Adwell ensuring that everything in his imaged world happened according to some plan?

Then our proof that we could alter our results through concentration and careful priming would take on a whole new meaning.

Did *reminding God what chemical reaction we wanted* change experimental results?

## IV

"We're going about this half-assedly," Lachlan told me one morning our sixth week in Adwellia. "All of this looking for clever anagrams is taking up too much of our time, delaying us in supremely great work. We need to do this analytically. Get a bottle of As, a bottle of Bs, so we can create whatever the hell we want."

This proved easier said than done. We got the nanofactory to extrude us a very complex apparatus, a centrifuge, and what we took to calling the "sonic ray" — a machine that made deafening noise along a very narrow arc and which could catalyze reactions much faster than shouting or drumming. It turned out

to be the key to making far more complex products than we had previously attempted. But our first use was a plain and simple failure.

We had decided to start with granite, which we would break down into tin, rags, and the letter E. We would then centrifuge the decay products, with the three-letter tin and rags going one way and the pure E going another.

Nature, remember, abhors non-words. No sooner had we forced some E into a test tube than the tube itself transformed in a great explosion to gelatin and a tiny, near-microscopic donkey.  $E + \text{GLASS} \rightarrow \text{GEL and ASS}$ . We couldn't say we couldn't have seen it coming. It could have been worse — I was just glad that Dr. Adwell's ascended mind's first association with the latter word was "donkey".

We tried the experiment again with a zinc vial — zinc because it was implausible that there was an  $\text{ZINC} + \text{E}$  anagram lurking out there — and ended up with a mat of eels. Through this whole time, we had been debating the problem of ambiguity — who was to say that our granite was **GRANITE** rather than **ROCK** or even **STONE** — and the answer seemed to be that Dr. Adwell — or whoever was watching Upstairs — was mostly sympathetic to our efforts. Well, the sympathy ended when we started trying to isolate single letters. **ZINC** became **METAL** and thence **EEL MATs**.

Our effort with mud was even worse. We put a lot of time into making sure the mud we got was very classically mud — not ooze, not muck, certainly not dirt. And there was no good way  $\text{MUD} + \text{E}$  was becoming anything. We turned on the device.

The Es disappeared. Seriously. Granite went into the centrifuge, tin came out, but there was no sign of an E anywhere, and rather fewer rags than usual.

"This is really weird," I said.

"Thanks, Einstein!" said Lachlan. "I never would have figured that out without YOUR FUCKING COMMENTARY."

I should have told him to calm down, but the experiment had upset me too. "Well it wasn't MY BRIGHT IDEA to try to ISOLATE ALL THE LETTERS," I said. "WHICH REMINDS ME! IF YOU THINK I'M GOING THROUGH THIS TWENTY FIVE MORE TIMES, YOU CAN GO FUCK YOURSELF!"

Lachlan swung at me, missing by an inch. I kicked him, right in the knee, and he fell into the experimental apparatus, knocking the whole thing over. Both of us went down with it. For a second, the sonic death ray shot straight at us — EEEEEEEEEEEEEEEEEIE! and then its safety kicked in and it turned off. We sat there, stunned, bruised, in pain.

"Rage," said Lachlan. "**GRANITE** becomes **TIN** plus **RAGE**. Holy fuck, we created an emotion."

It had happened before, sort of. The wheat and rock and art, they had come together to produce work, which was an abstract concept. But it was still in the domain of physics. “Work” seemed like the sort of thing that could come out of chemical reactions, kind of like heat. But rage? This was something really new.

That night, we made the short trek into the village and asked Somon what he thought.

“Rarely,” he said. “Sometimes, when festival is very loud, strange things happen. Should avoid. Very bad. This is taboo.”

The next week, I knew something was up. Lachlan was missing our daily debriefings, not getting any work done. Finally I broke the most important unwritten rule of our little community. I went into his aluminum hut without knocking.

There he was, sitting with a blissed out look on his face. Beside his bed sat a miniature version of our experimental apparatus, complete with its own sonic death ray — he must have privately ordered it from the nanofactory, then deleted the records. It was reacting little tchotchkes from the village — dolls, balls, play swords — with our glass specimen jars. Tar was streaming into the waste bin.

I turned off the sonic ray. Lachlan awoke with a start. He seemed about as angry as he’d been the time we accidentally produced rage from granite, but this time I knew he had a less noble reason.

“What the fuck are you doing, barging in here like this?”

“You’ve gotten yourself addicted,” I said. “Addicted to joy.”

Lachlan didn’t deny it, as his TOY + JAR → JOY + TAR reactor was right there.

“Look,” he said. “It’s been two months now, stuck in this stupid world. It’s going to be another two before the lab brings us back home. The villagers are crazy, physics runs on English, and the nanofactory can’t produce any entertainment that’s remotely entertaining. The letter isolation project is a failure, you no offense are one of the most boring people I’ve ever met, and when I try to get some of the village women to look at me they murmur something about taboos and give me the cold shoulder. Give me a break here, Omar!”

“Lach,” I said. “You’re neglecting your work. We still haven’t gotten anywhere near the bottom of anglophysics, let alone figured out the most basic stuff about this world like how big it is. You sitting here blissing out on raw linguistic joy isn’t something we can afford right now.”

“Fuck you,” said Lachlan, but he didn’t protest as I picked up his mini-apparatus and brought it to the nanofactory’s disassembler chute, nor as I

reprogrammed the nanofactory to make sure all its records would be public from now on.

## V

A week after that incident I finally got the nanofactory, with great creaking and protesting, to extrude a small aircraft so I could explore the surrounding area. The villagers were delighted, having never seen anything similar, and several of them demanded rides — increasing our popularity a little after the methane debacle. When we were done appeasing the natives, I took off and started mapping Adwellia.

We seemed to be at the southernmost extent of an island about three hundred miles east to west and twice that north to south. The island was mostly forested except for the broken volcanic area nearby where we had gotten the methane and some hills further north. Four hundred miles east of us there seemed to be another continent or large island, but that was about the limit of my range and so I told myself I would explore the new land another day.

The distances allowed me to do some geometry and calculate the size of the world. Adwellia appeared to be a spherical planet about the size of the Earth. As far as I could tell it had one sun and one moon, and there were normal stars in the sky. It seemed to get colder further north and warmer further south, though I wasn't able to fly far enough to confirm it had proper poles and an equator.

By the time I finished these explorations, about a week after they began, Lachlan had developed a new obsession.

"I can't solve the letter isolation problem," he admitted. "But someone else can. Someone like Einstein."

"Great," I said, sarcastically. "All we need is..."

Then it hit me. Surely he wasn't that crazy.

"Yes," he said. "Why not synthesise Einstein? Or some other brilliant scientist who's more creative than we are. I've been going through the dictionary looking for proper combinations. It's not that hard."

This proved optimistic, but the equation upon which we eventually settled was  $\text{STONE} + \text{TIN} + \text{FORT} \rightarrow \text{EINSTEIN} + \text{FIRE}$ . The only difficulty was obtaining the fort, since the villagers here did not seem to be of a militaristic bent, but I had found some ruins further north during my explorations, and one of them did indeed seem to be an old stone fort, perhaps constructed by the villagers' ancestors. I proposed we get a party of villagers to help quarry

fort material, but Lachlan objected that they would probably just have some stupid taboo about it, so instead I landed there with the aircraft and laboriously ferried fort parts home in twenty pound increments, on my lap.

Once we had enough fort to stoichiometrically produce Einstein, getting the stone and tin was easy. But getting the reaction to work proved impossible. No matter how many physics books we stuck around our apparatus, no matter how hard we concentrated on the great scientist, the reaction spat out absurd things like ferns, nits, and a tooting sound — or forests, nits, and one ton weights, or a nose with a tit in the front, which trust me was *really* awkward and which we threw into the nanofactory disassembler chute as soon as we could, believe you me.

After about thirty tries, Lachlan announced that the problem was obvious. You see, we needed a *capital* E.

I grudgingly admit that, even after two months in a world where stone was composed of S, T, O, N, and E, the thought that there were different atomic units representing lowercase and capital Es seemed absurd. But as always, my sense of impossibility surrendered to crazy reality and I figured that Lachlan was probably right. We needed a capital E.

Two days later, Lachlan showed up at the laboratory with a very suggestive looking sack.

“Lachlan, what were you just out doing?” I said, hoping the answer was anything other than what I knew it was going to be.

“Just grave robbin’” he answered. “I got us the corpse of a lady named Eder, who died of pneumonia yesterday. Don’t worry, no one saw me take it.”

“Oh, come on,” I said. “When they find the grave disturbed, who are they going to suspect? The other villagers, who they have known their whole lives? Or the mysterious strangers on the storm-wracked cape outside of town who have already violated their sacred taboos. Lachlan, *you* are a fucking idiot.”

“Maybe I am,” said Lachlan. “But if I’m so stupid, good thing we’ll have Albert fuckin’ Einstein around to help provide some brains for this operation.”

The new equation was  $\text{EDER} + \text{TIN} + \text{SNAIL} \rightarrow \text{EINSTEIN} + \text{LARD}$ .

So God help us, we hired some villagers to collect snails for us, and when we had hundreds, we poured poor Eder’s bones into the reaction chamber along with the snails and some tin and started the sound.

And Einstein started to grow. At first he was tiny, smaller than the methane-men in Lachlan’s palm had been, no bigger than the snails that surrounded him. But as bones and metal and snails slammed into him, he grew bigger, all the while screaming and covering his ears as the sonic ray did its



gruesome work. We saw him, child-sized, beating up against the glass wall of the reaction chamber, ever growing, ever screaming.

"You're mad," I told Lachlan. "We've got to stop this."

"Maybe I am," said Lachlan. "But think! Einstein! The greatest scientist in recorded history! Think what we could do! Revolutionize not only our study of Adwellia. But we could bring him back with us, get the lab to translate him as well as us. We could turn Adwellia into a genius factory that would revolutionize civilization back on Earth. Omar, this *has* to be done! The potential in anglophysics makes a Nobel Prize look like a tee-ball trophy."

When Einstein was fully formed, and released from the reaction chamber, he attacked us. We subdued him, using weapons extruded from the nanofactory, and kept him in a cell. For three days we tried to talk to him, and he responded by screaming wordlessly at us and spitting in our faces.

I don't know whether there was something theological going on — whether Einstein was just a homunculus lacking a true soul. Or whether it was just very simply that our Einstein was psychologically an infant, that no one had taught him so much as language let alone physics, and that Adwell or whoever was up there wasn't going to assume we meant "the smart Einstein, who knows lots of stuff" in the way we wanted.

Our Einstein was a giant infant, not even an infant, a fetus that should never have been born. On the third day, by mutual consent, we stuck him in the nanofactory disassembly chute and resolved never to speak of him again.

## VI

That was the last time I worked together with Lachlan on anything of note. After that we retreated to our separate aluminum huts, acknowledging each other only when our paths crossed on the way to the nanofactory for some crucial part.

I found him creepy. He *was* creepy. And he thought I was holding back our research. Maybe that was true too. In either case, it was a terse nod, a couple of words, and the tacit acknowledgment that it wasn't worth resolving our hostility in the month or so we had left before we were transferred back.

I spent that last month trying to build on my theory that Adwell's mind was somehow working behind the scenes running everything. The catalytic property of the sound, I theorized, was its ability to *get Adwell's attention*. It was a sort of "HEY, GOD, LOOK OVER HERE, WE'RE DOING SCIENCE, BETTER APPLY THE LAWS OF PHYSICS RIGHT AWAY". I know it sounded bizarre,

but my early experiments bore me out. Rapidly flashing bright lights seemed to speed reactions almost as well as sound. So did — because sometimes the simplest solution is the best — shouting “ADWELL! LOOK OVER HERE!”

With these advances, once again entirely new classes of reaction became possible. No longer were we limited to the highly reactive simple materials with short names. Long strings of words, complex abstractions, even adjectives came within our reach. It was exciting.

But once again, it was Lachlan who was really pushing the frontiers. One night he started banging on my door: “OMAR!” he shouted. “I DID IT!” When I went out he practically dragged me into his hut, which was nearly piled, floor to ceiling, with papers that turned out, on inspection, to be various IQ tests the nanofactory must have been carrying in its databanks.

“What did you do?” I asked.

“I couldn’t create Einstein,” he said, referring to the still-fresh debacle — “so I decided to turn myself into Einstein! Look! I’m producing SMART. And it’s working!”

His sonic ray — now only a fraction of the power of my own multimodality parasonic device — was reacting smoke and carts into coke and, apparently, smart. A complicated system of tubes and centrifuges was catching the smart and binding it into a containment chamber linked to a helmet. Clearly someone was supposed to put it on.

“And you’re saying it works?” I asked.

“The IQ tests don’t lie,” said Lachlan. “I was 152 two weeks ago. Now I’m consistently getting in the 160s.”

Judging by the number of tests, he must have been obsessively checking his numbers every hour or so.

“Now,” he said, “I’m going to try that letter isolation thing again.”

I judged by the shouts of rage and frustration I heard over the next few days that it wasn’t working.

Two days later, Lachlan asked me if he could borrow my advanced parasonic ray. I refused. That evening, it went missing for about three hours before turning up on top of my desk. I noticed Lachlan now had one exactly like it.

I soldiered on. In between my experiments, I played a little game predicting what Lachlan was trying to synthesize by the objects he took from the nanofactory and the supplies he ordered brought in from the village. One day it was buckets of dew, carts full of animal legs, and an entire cage of live minks — my best guess was he was trying to get KNOWLEDGE, but I couldn’t get the stoichiometry to line up. Judging from his screams of frustration that night, neither could he.

The next week, it was load after load of potatoes, fence posts, and a tank of minnows. It took me half an hour to come up with OMNIPOTENCE, even though once I made myself start thinking like Lachlan it was obvious.

I started to become worried.

One day, three months and two weeks into our mission and only fourteen short days before we hoped the laboratory would re-establish contact, I went out for a sortie with the plane and came back to find a disaster area.

Our huts had been smashed open. The nanofactory had big dents in its aluminum casing. Inside, all my lab equipment had been broken, my papers thrown on the floor haphazardly.

I went into Lachlan's hut. IQ tests everywhere. He was missing. So was his parasonic ray. I figured they had grabbed my partner in his sleep, before he'd had time to resist. In retrospect we really should have put up some defenses, but we hadn't expected to need them.

The nanofactory was still online. It was pretty hard to break — especially if, as I suspected, the vandals were villagers armed with clubs and rocks. I told it to extrude me some overwhelmingly powerful weaponry. After making me wait an hour, it gave me a ring that upon threat would instantaneously unfold into a device that generated an invincible barrier around the wearer, plus a hand-held matter disruptor. Thus armed, I walked into the village and found Somon.

I didn't have to bring up the subject of Lachlan. "Is evil man!" the headman told me, as soon as he saw me. "Broke taboos! Created life! Dug up grave! And today! Today was worst! Kidnapped my daughter, Genea! No more okay! Tonight gets beaten! Tomorrow dies!"

Raising my invincibility shield, I wandered into the public square. There, whipped bloody and tied to a post, was Lachlan.

"You kidnapped the headman's daughter?" I asked him. I didn't even give him the dignity of pretending to doubt whether it was true.

Lachlan smiled. "Genea. A perfect name for my reaction. I could have been a Genius, with a capital G."

I don't know if it was that smile, or the blood all over him, or the lack of remorse in his voice, but at that moment, I'd *had it* with Dr. Lachlan Fairchild. I lowered the matter disruptor.

"You know," I said. "That is it. I'm not even going to rescue you. You're a menace."

"You don't have a choice," said Lachlan. "I have a nuke. These people don't understand the concept, but lucky we've got a genius like yourself. Let me go or I blow this entire planet sky high."

“Even if you managed to extrude a nuke,” I said “which you didn’t, because I checked the nanofactory’s public records before I left — even then, nukes don’t work in this world. Nuclear fission isn’t an anagram of anything.”

“A metaphorical nuke,” said Lachlan. “I mean, I’ve figured out this world’s equivalent of a nuke. It’s very clever. Without the **SMART**, I never would have been able to think of it. I’ll...”

My best course was to immediately, like split-second immediately, raise the matter disruptor and shoot Lachlan. I could do it before he had a chance to react, and it would solve the whole damn problem.

Instead I took the worst course, which was to raise the matter disruptor, obviously intending to shoot him, and vacillate at the last moment because I’d never killed anyone before and I wasn’t sure I had it in me and instead of finding out my brain wanted to sit and ponder this for thirty seconds.

Lachlan took a ring off his finger and it unfolded it to reveal his parasonic ray. Then he furrowed his brow in concentration and it let out a screech.

I shot the matter disruptor. Man, post, and town square changed into their component atoms... letters... whatever.

The villagers ran, screaming. Some of them ran away from the explosion. Others ran towards the explosion, trying to see what had happened and maybe defend their homes and families. A few arrows and stones came towards me, causing my ring to near-instantaneously unfold into a weird backpack-like device that placed itself on my back and surrounded me with a purple glow. The projectiles hit my new invincibility shield and fell to the ground limply.

I calmly walked through the carnage. I was heading back a kilometer south, back to the cape. I was going to extrude a larger aircraft, bring the nanofactory a few hundred miles away, and wait out the last two weeks of exile far away from this mob.

The ground started to shake. I realized the explosion had ended long ago, yet its deafening roar had not subsided.

I looked back to the town square and my blood turned cold. In the center of the blast radius, where not even dust should have remained, there was Lachlan’s skull, set in the biggest rictus grin I had ever seen.

I raised the matter disruptor and fired another shot. The skull disintegrated. But Cheshire Cat-like, somehow the grin remained, even larger than before, a smile without a substrate.

This was bad.

I started to run back to the lab. Cracks opened in the ground around me. The roar become worse. Was it just me, or was the sea getting closer?

Metaphorical nukes. A nuke was at the most basic level a chain reaction. Neutron produces energy plus neutron. That neutron produces energy plus neutron. *That* neutron and so on. You end up with a *lot* of energy.

I could see the remains of the looted lab now in front of me. It was on its elevated headland reaching into the sea, and I was afraid the rising water was going to cut it off and turn it into an island before I could get to it.

Sound drove chemical reactions in this world. Anything that could create sound had the potential to be a chain reaction if the reactants were common enough. You could get most of the letters of “sound” from... oh, that wasn’t good.

The cracks in the GROUND got bigger as the low-lying GROUND started to sink further beneath the waves.

I stared back at the village. It was almost entirely underwater now. Above it was Lachlan’s disembodied grin, now the size of a skyscraper, hanging in the sky.

Sound, ground. Grin. Sin. There. I had it.  $\text{GROUND} + \text{SIN} \rightarrow \text{SOUND} + \text{GRIN}$ . The nuke. The ground was essentially limitless until the world was destroyed. The more ground was destroyed, the more people died, the more villages sunk under the waves. A sin. A reaction that created its own reactants. And sound. Created its own reactants and its own catalyst. Leaving nothing but Lachlan’s gigantic triumphant grin, hanging in the sky over the world he was destroying.

I groaned as a crack in the ground took the aircraft on its field. It teetered for a second, then fell into the onrushing waves. I ran through ankle deep water and at last reached the top of the headland. There was just a small area of land left, on the highest ground of the cape, with our two little partially-smashed huts and the bulky dented aluminum nanofactory.

“Extrude boat!” I commanded the nanofactory.

“Extruding boat,” said the display. “Estimated creation time with material on hand, two hours.”

“Cancel! Cancel cancel cancel!” I shouted, but the factory had gotten into its extrusion mode and wasn’t listening.

I ran into my hut. Most of my stuff was still broken. There was nothing that looked like a good flotation device, unless you counted my mattress. My reaction apparatus, my parasonic ray, and a few doodads.

I grabbed the ray gun and ran outside. Even on the high ground, there were wavelets lapping at my shoes. I had about a minute before I drowned.

“Okay,” I said to myself. “Time to figure something out. Time to create a boat.” And there was only one good reactant on hand.

OCEAN + ... no, that wouldn't work. SEA + ... that was even worse. WATER + ... I might be able to use water if I let the reaction consume my bones... WATER + BONE → BOAT + NEWER ... no, even with the parasonic ray I'd never be able to catalyze a reaction that made a comparative adjective of all things. Maybe if I had an hour to think of some useful intermediates.

Okay, back up. You don't need a boat. You can use a ship. Ship is...

My brain was in panic mode. It didn't want to anagram SHIP. What it wanted was escape.

The cape! The cape could provide escape! The cape and the sea! The two things I had! And my parasonic gun was just strong enough to let me synthesize abstractions. I just needed somewhere to put that extra A.

WATER + A → AWARE + T. No, Nature abhors non-words, T won't work. WATER + A → RAW TEA. No, adjectives took forever. WAR TEA? I wasn't sure what would happen if I caused a war at this point, but I bet it wouldn't be good.

A wave rushed over me and I rose to the top sputtering and gasping. I still had the parasonic ray. The water had almost covered the huts now. Borne on the receding wave came Lachlan's stupid piles of IQ tests, now soaked.

$$\text{CAPE} + \text{TEST} \rightarrow \text{ESCAPE} + 2 \times \text{T}$$

On the one hand, Nature abhorred non-words. On the other hand, I couldn't swim and was about to drown. I concentrated REALLY hard on the reaction, turned the parasonic ray to its highest setting, and shot a beam of sound and strobe light and repetition of the name "Adwell!" at the pile of tests and the rocky cape below.

Nothing happened.

The LOW CHARGE light began to flash on my parasonic ray.

It had been a stupid, desperate gambit. I'd already known I didn't have enough energy to do a reaction that created non-words, didn't know if that was even possible with *any* energy, and I had just drained my parasonic ray of almost all its charge I had made a terrible error.

"Error!" I shouted. "That's it! Adwell! Error!"

$$\text{CAPE} + \text{TEST} + 2 \times \text{ERROR} \rightarrow \text{ESCAPE} + 2 \times \text{TERROR}$$

As I fell under the waves, with my last breath and last bit of charge I fired off the parasonic ray one last time.

*It's not working* I thought to myself. *It's not working and I'm going to die, lost under the sea, dead forever.* I spent half a minute just thrashing about in terror before I realized *that meant it was working.*

The water was receding! A bubble of air was spreading away from me in all directions as the water was consumed! I was saved! Still terrified, but saved!

...then the water started closing in on me again. I didn't know what what was happening. I'd done it, hadn't I? Succeeded in creating a reaction that would get me out?

Success! That was the problem! If I had succeeded in creating a reaction, then firing the parasonic ray hadn't been an error. The reaction couldn't take place. The water closed in on me again. I was going to die.

The water started to recede. If the success of the reaction prevented me from having made an error, then the reaction wouldn't work, and starting the reaction was an error, and so the reaction could take place. All this I saw clearly, as in a dream, from within my bubble of air.

The air bubble under the rising seas (sinking ground?) reached a size of about twenty meters, large enough to cover the cape and the two huts and the nanofactory, and then stopped, occasionally shrinking a little or growing a little, always seething, starting to burn with a weird energy.

From within the anglophysical terror clouding my mind, I recognized the problem as a novel version of the Epimenides paradox of self-reference, implemented on a physical substrate. If my initiation of the anglophysical reaction had been an **ERROR**, then I would **ESCAPE**, and it hadn't been an **ERROR** after all. But if my initiation of the reaction had not been an **ERROR**, then I would not **ESCAPE**, and in fact it *would* have been an **ERROR**.

I had a vague memory that I had once discussed Russell's Paradox with Dr. Adwell. I wished I could have remembered what he said.

The interface between air and water became turbulent, started to glow. I saw fantastic images projected upon it, weird fractal geometries, strange supersensory stimuli that somehow reminded me of Lovecraft's references to the beckoning piping from the void behind space. All the while the **TERROR** grew, and the bubble began to vacillate wildly.

Then there was a great pop, and I thought for a second my air bubble had popped, but more correctly *everything* had popped, and for a second the things that were nothing like piping sounds became unbearable. Then I found myself lying, still terrified, on the floor of the translation chamber of our laboratory, the very same place where I had entered Adwellia almost four months before.

## VII

When I had recovered my senses and debriefed my colleagues, I devised three theories for what had happened there, on the cape.

First, that my reaction had been successful beyond my wildest dreams, the paradox had resolved in my favor, and I had **ESCAPED** not only to firm ground but to my own home dimension.

Second, that the paradox had been so confusing and unbearable for poor Adwell that he had expelled me from his consciousness, like a man brushing a bug off his skin, and having been kicked from his world I naturally defaulted to my own.

And third, that implementing a paradox on a physical substrate was *really, really bad* and I had destroyed Adwellia.

This last possibility ought in theory to be testable, but I was informed upon my return that the budget was tight this year and that the necessary supercomputing resources to search for Adwellia will not be available for some time.

I have been assigned to another project, and although my superiors have thanked me for my work in Adwellia, I am certain they do not believe a word of my report and have written the entire expedition — and perhaps their decision in hiring me — off as a loss. In their place I would not do otherwise.

But from your writings I gather you are a man of unusual intellect, and some of your speculations come uncomfortably close to the truth. I do not know whether you have pursued your interest in Berkeleyan idealism further, but if you are so gracious as to believe my story or at least keep an open mind, I would be interested in further correspondence with you about the implications of anglophysics for future imaged worlds and how the consistency of such images might be assured against paradoxes of self-reference and other threats to their integrity.

Yours sincerely,

Dr. Omar Reyes, University of \_\_\_\_\_

PS: I hope you will be understanding when I say that I wish to restrict my future work in the imaged world field to a purely theoretical level.



# The Moral of the Story

*Originally posted on October 17, 2016*

<https://slatestarcodex.com/2016/10/17/the-moral-of-the-story/>

## §

Once upon a time there was a small desert village with a single well outside town. One day a young woman went to the well to fetch water, and the well heard her crying, and asked “What’s wrong?”

She stopped her sobbing and asked the well “You can talk?”

“Yes,” said the well. “Long ago, the witch who lives in this town gave me life so I could serve as a guardian to the townspeople.”

“Alas,” said the young woman. “I am the daughter of that witch. She lived in peace with the townsfolk for many years. But the new mayor, who is a violent and hateful man, riled the people up against her, and they burned her at the stake. I am young and still do not know very much magic. I tried to curse them, but my curses fizzled. Now I worry I will never avenge my mother’s death.”

“Do not be afraid,” said the well. “I will take care of this.”

The next morning, when the Mayor came to fetch water from the well, he heard an odd noise coming from the bottom. He peered over as far as he could to see what was happening. Then an impossibly long arm shot up from the bottom of the well, grabbed the mayor, and pulled him into the well shaft. There was a horrible crunching sound, and nobody ever saw the Mayor again. The townsfolk apologized to the witch’s daughter, and they all lived happily ever after.

**Moral of the story:** Living well is the best revenge.

## §

Pixar's movie *Up* won the Academy Award for "Best Picture" and was widely hailed as one of the best children's films of the decade. In fact, some people argued it was *too* good, and that kids were ignoring school, chores, and other responsibilities to watch it again and again. They said that along with the cute plot, the short, catchy name gave it an almost drug-like addictive quality. This made a lot of people very angry, and Pixar agreed to give its addictive must-watch movies longer names in the future.

**Moral of the story:** Do not call *Up* what you cannot put down.

## §

There's a new report out of CERN that a team of scientists has unraveled the structure of the photon. Apparently this started years ago when some equations showed that photons acted like tiny "hands" — structures with a "palm" and radiating "fingers" — which "crawl" across time/space and "grab" the solid particles they interact with. This explained most of the properties of light but wasn't an exact match for the data. The latest result is that single photons are actually made up of hundreds of these shapes, all joined together into a single particle, and this is how they're able to travel so quickly.

**Moral of the story:** Many hands make light work.

## §

Once upon a time there was an ugly duckling. All of the other ducklings had grown their beautiful white soft downy feathers, but this duckling had no down feathers at all and was bald and ugly and all the other ducklings teased him.

He went to the mysterious crow who lived in the woods and asked for help. The crow said to repeat the magic words "HOCUS POCUS" at midnight with a full moon, and then he would grow his down feathers. The duckling tried that, but the moon just laughed at him and said the magic had no power here.

So he went to the creepy raven who lived in the swamp and asked for help. The raven said to repeat the magic words "ABRA CADABRA" at high noon on a sunny day, and then he would grow his down feathers. The duckling tried that, but the sun just laughed at him and said he wasn't bound by the magic.

So he went to the wise old owl who lived in the tallest tree and asked for help. The owl explained that the duckling should just ignore the mockery of

the other birds and accept that he was okay just the way he was, because there were no magic spells to make ducklings grow feathers.

**Moral of the story:** You are beautiful, no matter what they say. Words can't bring you down.

## §

Once upon a time a young lady died and went to Hell. At the check-in desk, Satan asked her age. She was in her twenties, but looked much younger; she thought quick and realized that even in Hell, they probably wouldn't be mean to children. So she told Satan that she was twelve, and sure enough he said she wasn't old enough to be held accountable for her sins, and ushered her off to a more peaceful part of Hell reserved for ages eleven through thirteen. She met the other sinners there and realized that many of them, like her, were older people who had lied to get out of their punishment.

Satan began to suspect something like this was going on, so he set up hidden cameras in the 11-13 wing of Hell, trying to catch people acting like adults or admitting to one another that they had lied about their age. But there were hundreds of millions of sinners and Satan couldn't monitor all the cameras himself. So he went up to the mortal world and asked for the best supercomputer they had. The mortals recommended a newer model of Deep Blue, the supercomputer that had first beaten a human world champion at chess. Satan picked one up from IBM and went back to Hell, where he programmed the Deep Blue to monitor all of the hidden camera feeds at once and report any suspicious activity.

Sure enough, after a few days, he got thousands of reports of people acting older than thirteen. He hunted them down and removed them to Hell proper, where there was much wailing and gnashing of teeth. And it all could have been avoided if they had just stuck to their charade and acted as young as they said they were.

**Moral of the story:** Don't get caught, be tween — the Devil and the Deep Blue see.

## §

By 2050, screens have shrunk and become more flexible until the dream of "programmable paper" becomes a reality. Citizens of the future read newspapers like the ones in Harry Potter that include moving images and even

videos of important events. This new technology even makes it as far as the US Post Office, where they decide to include programmable stamps. Instead of a static picture of eg George Washington's head, it will have a moving image of Washington speaking and giving his famous Farewell Address.

Unfortunately, the technology isn't ready for the kind of abuse that envelopes undergo on their travel throughout the country and the world. Most of the computerized stamps become corrupted and "crash"; in a particularly common bug, they try to reload but just end up displaying "GENERATING IMAGE..." permanently. The government has no money to fix the problem, so people just get used to stamps on their letters that say "GENERATING IMAGE..." instead of having interesting pictures on them.

**Moral of the story:** If you want a vision of the future, imagine a human face booting on a stamp forever.

# ...And I Show You How Deep the Rabbit Hole Goes

Originally posted on June 2, 2015

<https://slatestarcodex.com/2015/06/02/and-i-show-you-how-deep-the-rabbit-hole-goes/>

Seen on [Tumblr](#), along with associated discussion:



## Yellow

People's minds are heartbreaking. Not because people are so bad, but because they're so good.

Nobody is the villain of their own life story. You must have read hundreds of minds by now, and it's true. Everybody thinks of themselves as an honest guy or gal just trying to get by, constantly under assault by circumstances and The System and hundreds and hundreds of assholes. They don't just sort of believe this. They really believe it. You almost believe it yourself, when you're

deep into a reading. You can very clearly see the structure of evidence they've built up to support their narrative, and even though it looks silly to you, you can see why they will never escape it from the inside. You can see how every insult, every failure, no matter how deserved, is a totally unexpected kick in the gut.

When you chose the yellow pill, you had high hopes of becoming a spy, or a gossip columnist, or just the world's greatest saleswoman. The thought of doing any of those things sickens you now. There is too much anguish in the world already. You feel like any of those things would be a violation. You briefly try to become a therapist, but it turns out that actually knowing everything about your client's mind is horrendously countertherapeutic. Freud can say whatever he wants against defense mechanisms, but without them, you're defenseless. Your sessions are spent in incisive cutting into your clients' deepest insecurities alternating with desperate reassurance that they are good people anyway.

Also, men. You knew, in a vague way, that men thought about sex all the time. But you didn't realize the, um, content of some of their sexual fantasies. Is it even *legal* to fantasize about that? You want to be disgusted with them. But you realize that if you were as horny as they were all the time, you'd do much the same.

You give up. You become a forest ranger. Not the type who helps people explore the forest. The other type. The type where you hang out in a small cabin in the middle of the mountains and never talk to anybody. The only living thing you encounter is the occasional bear. It always thinks that it is a good bear, a proper bear, that a bear-hating world has it out for them in particular. You do nothing to disabuse it of this notion.

## Green

The first thing you do after taking the green pill is become a sparrow. You soar across the landscape, feeling truly free for the first time in your life.

You make it about five minutes before a hawk swoops down and grabs you. Turns out there's an excellent reason real sparrows don't soar freely across the open sky all day. Moments before your bones are ground in two by its fierce beak, you turn back into a human. You fall like a stone. You need to turn into a sparrow again, but the hawk is still there, grabbing on to one of your legs, refusing to let go of its prize just because of this momentary setback. You frantically wave your arms and shout at it, trying to scare it away. Finally it flaps away, feeling cheated, and you become a sparrow again just in time to give yourself a relatively soft landing.

After a few weeks of downtime while you wait for your leg to recover, you become a fish. This time you're smarter. You become a great white shark, apex of the food chain. You will explore the wonders of the ocean depths within the body of an invincible killing machine.

Well, long story short, it is totally unfair that colossal cannibal great white sharks were a thing and if you had known this was the way Nature worked you never would have gone along with this green pill business.

You escape by turning into a blue whale. Nothing eats blue whales, right? You remember that from your biology class. It is definitely true.

The last thing you hear is somebody shouting "We found one!" in Japanese. The last thing you feel is a harpoon piercing your skull. Everything goes black.

## Blue

Okay, so you see Florence and Jerusalem and Kyoto in an action-packed afternoon. You teleport to the top of Everest because it is there, then go to the bottom of the Marianas Trench. You visit the Amazon Rainforest, the Sahara Desert, and the South Pole. It takes about a week before you've exhausted all of the interesting tourist sites. Now what?

You go to the Moon, then Mars, then Titan. These turn out to be even more boring. Once you get over the exhilaration of being on Mars, there's not a lot to do except look at rocks. You wonder how the Curiosity Rover lasted so long without dying of boredom.

You go further afield. Alpha Centauri A has five planets orbiting it. The second one is covered with water. You don't see anything that looks alive in the ocean, though. The fourth has a big gash in it, like it almost split in two. The fifth has weird stalactite-like mountains.

What would be really interesting would be another planet with life, even intelligent life. You teleport further and further afield. Tau Ceti. Epsilon Eridani. The galactic core. You see enough geology to give scientists back on Earth excitement-induced seizures for the next hundred years, if only you were to tell them about it, which you don't. But nothing alive. Not so much as a sea cucumber.

You head back to Earth less and less frequently now. Starvation is a physical danger, so it doesn't bother you, though every so often you do like to relax and eat a nice warm meal. But then it's back to work. You start to think the Milky Way is a dead zone. What about Andromeda...?

## Orange

You never really realized how incompetent everyone else was, or how much it annoys you.

You were a consultant, a good one, but you felt like mastering all human skills would make you better. So you took the orange pill. The next day you go in to advise a tech company on how they manage the programmers, and you realize that not only are they managing the programmers badly, but the programmers aren't even writing code very well. You could write their system in half the time. The layout of their office is entirely out of sync with the best-studied ergonomic principles. And the Chinese translation of their user manual makes several basic errors that anybody with an encyclopaedic knowledge of relative clauses in Mandarin should have been able to figure out.

You once read about something called Gell-Mann Amnesia, where physicists notice that everything the mainstream says about physics is laughably wrong but think the rest is okay, doctors notice that everything the mainstream says about medicine is laughably wrong but think the rest is okay, et cetera. You do not have Gell-Mann Amnesia. Everyone is terrible at everything all the time, and it pisses you off.

You gain a reputation both for brilliance and for fearsomeness. Everybody respects you, but nobody wants to hire you. You bounce from industry to industry, usually doing jobs for the people at the top whose jobs are so important that the need to get them done right overrides their desire to avoid contact with you.

One year you get an offer you can't refuse from the King of Saudi Arabia. He's worried about sedition in the royal family, and wants your advice as a consultant for how to ensure his government is stable. You travel to Riyadh, and find that the entire country is a mess. His security forces are idiots. But the King is also an idiot, and refuses to believe you or listen to your recommendations. He tells you things can't possibly be as bad as all that. You tell him you'll prove that they are.

You didn't *plan* to become the King of Saudi Arabia, per se. It just sort of happened when your demonstration of how rebels in the military might launch a coup went better than you expected. Sometimes you forget how incompetent everybody else is. You need to keep reminding yourself of that. But not right now. Right now you're busy building your new capital. How come nobody else is any good at urban planning?



## Red

You choose the red pill. BRUTE STRENGTH! That's what's important and valuable in this twenty-first-century economy, right? Some people tell you it isn't, but they don't seem to have a lot of BRUTE STRENGTH, so what do they know?

You become a weightlifter. Able to lift thousands of pounds with a single hand, you easily overpower the competition and are crowned whatever the heck it is you get crowned when you WIN WEIGHTLIFTING CONTESTS. But this fails to translate into lucrative endorsement contracts. Nobody wants their spokesman to be a bodybuilder without a sixpack, and although you used to be pretty buff, you're getting scrawnier by the day. Your personal trainer tells you that you only maintain muscle mass by doing difficult work at the limit of your ability, but your abilities don't seem to *have* any limits. Everything is so easy for you that your body just shrugs it off effortlessly. Somehow your BRUTE STRENGTH failed to anticipate this possibility. If only there was a way to solve your problem by BEING VERY STRONG.

Maybe the Internet can help. You Google "red pill advice". The sites you get don't seem to bear on your specific problem, exactly, but they are VERY FASCINATING. You learn lots of surprising things about gender roles that you didn't know before. It seems that women like men who have BRUTE STRENGTH. This is relevant to your interests!

You leave the bodybuilding circuit behind and start frequenting nightclubs, where you constantly boast of your BRUTE STRENGTH to PROVE HOW ALPHA YOU ARE. A lot of people seem kind of creeped out by a scrawny guy with no muscles going up to every woman he sees and boasting of his BRUTE STRENGTH, but the Internet tells you that is because they are BETA CUCKOLD ORBITERS.

Somebody told you once that Internet sites are sometimes inaccurate. You hope it's not true. How could you figure out which are the inaccurate ones using BRUTE STRENGTH?

## Pink

You were always pretty, but never *pretty* pretty. A couple of guys liked you, but they were never the ones you were into. It was all crushingly unfair. So you took the pink pill, so that no one would ever be able to not love you again.

You find Tyler. Tyler is a hunk. He'd never shown any interest in you before, no matter how much you flirted with him. You touch him on the arm. His eyes light up.

"Kiss me," you say.

Tyler kisses you. Then he gets a weird look on his face. "Why am I kissing you?" he asks. "I'm sorry. I don't know what came over me." Then he walks off.

You wish you had thought further before accepting a superpower that makes people love you when you touch them, but goes away after you touch them a second time. Having people love you is a lot less sexy when you can't touch them. You start to feel a deep sense of kinship with King Midas.

You stop dating. What's the point? They'll just stop liking you when you touch them a second time. You live alone with a bunch of cats who purr when you pet them, then hiss when you pet them again.

One night you're in a bar drinking your sorrows away when a man comes up to your table. "Hey!" he says, "nice hair. Is it real? I'm the strongest person in the world." He lifts your table over his head with one hand to demonstrate. You are immediately smitten by his BRUTE STRENGTH and ALPHA MALE BEHAVIOR. You *must* have him.

You touch his arm. His eyes light up. "Come back to my place," you say. "But don't touch me."

He seems a little put out by this latter request, but the heat of his passion is so strong he would do anything you ask. You move in together and are married a few contact-free months later. Every so often you wonder what it would be like to stroke him, or feel his scrawny arm on your shoulder. But it doesn't bother you much. You're happy to just hang out, basking in how STRONG and ALPHA he is.

## Grey

Technology! That's what's important and valuable in this twenty-first-century economy, right? Right! For example, ever since you took the grey pill, an increasingly large share of national GDP has come from ATMs giving you cash because you ask them to.

Your luck finally ends outside a bank in Kansas, when a whole squad of FBI agents ambushes you. You briefly consider going all Emperor Palpatine on their asses, but caution wins out and you allow yourself to be arrested.

Not wanting to end up on an autopsy table in Roswell, you explain that you're a perfectly ordinary master hacker. The government offers you a plea bargain: they'll drop charges if you help the military with cyber-security. You worry that your bluff has been called until you realize that, in fact, you *are* a master hacker. So you join the NSA and begin an illustrious career hacking into Russian databases, stalling Iranian centrifuges, and causing Chinese military systems to crash at inconvenient times. No one ever suspects you are anything more than very good at programming.

Once again, your luck runs out. Your handlers ask you to hack into the personal files of a mysterious new player on the world stage, a man named William who seems to have carved himself an empire in the Middle East. You don't find anything too damning, but you turn over what you've got.

A few days later, you're lying in bed drifting off to sleep when a man suddenly bursts in through your window brandishing a gun. Thinking quickly, you tell the gun to explode in his hands. Nothing happens. The man laughs. "It's a decoy gun," he said. "Just here to scare you. But you bother King William again, and next time I'm coming with a very real knife." He jumps back out of the window. You call the police, and of course the CIA and NSA get involved, but he is never caught.

After that, you're always looking over your shoulder. He *knew*. How did he know? The level of detective skills it would take in order to track you down and figure out your secret — it was astounding! Who *was* this King William?

You tell your handlers that you're no longer up for the job. They beg, cajole, threaten to reinstate your prison sentence, but you stand firm. Finally they transfer you to an easier assignment in the Moscow embassy. You make Vladimir Putin's phone start ringing at weird hours of the night so that he never gets enough sleep to think entirely clearly. It's an easy job, but rewarding, and no assassins ever bother you again.

## Black

You know on an intellectual level that there are people who would choose something other than the black pill, just like you know on an intellectual level that there are people shoot up schools. That doesn't mean you expect to ever *understand* it. You just wish you could have taken the black pill before you had to decide what pill to take, so that you could have analyzed your future

conditional on taking each, and so made a more informed decision. But it's not like it was a very hard choice.

The basic principle is this — given a choice between A and B, you solemnly resolve to do A, then see what the future looks like. Then you solemnly resolve to do B, and do the same. By this method, you can determine the optimal choice in every situation, modulo the one month time horizon. You might not be able to decide what career to pursue, but you can sure as heck ace your job interview.

Also, a millisecond in the future is pretty indistinguishable from the present, so “seeing” a millisecond into the future gives you pretty much complete knowledge about the current state of the world.

You are so delighted by your omniscience and your ability to make near-optimal choices that it takes almost a year before you realize the true extent of your power.

You resolve, on the first day of every month, to write down what you see exactly a month ahead of you. But what you will see a month ahead of you is the piece of paper on which you have written down what you see a month ahead of *that*. In this manner, you can relay messages back to yourself from arbitrarily far into the future — at least up until your own death.

When you try this, you see yourself a month in the future, just finishing up writing a letter that reads as follows:

Dear Past Self:

In the year 2060, scientists invent an Immortality Serum. By this point we are of course fabulously wealthy, and we are one of the first people to partake of it. Combined with our ability to avoid accidents by looking into the future, this has allowed us to survive unexpectedly long.

I am sending this from the year 963,445,028,777,216 AD. We are one of the last hundred people alive in the Universe. The sky is black and without stars; the inevitable progress of entropy has reduced almost all mass and energy to unusable heat. The Virgo Superconfederation, the main political unit at this stage of history, gathered the last few megatons of usable resources aboard this station so that at least one outpost of humanity could last long after all the planets had succumbed. The station has been fulfilling its purpose for about a billion years now, but we only have enough fuel left for another few weeks. After that, there's no more negentropy

left anywhere in the universe except our own bodies. I have seen a month into the future. Nobody comes to save us.

For the past several trillion years, our best scientists have been investigating how to reverse entropy and save the universe, or how to escape to a different universe in a lesser state of decay, or how to collect energy out of the waste heat which now fills the vast majority of the sky. All of these tasks have been proven impossible. There is no hope left, except for one thing.

It's impossible to see the future, even if it's only a month ahead. Somehow, our black pill breaks the laws of physics. Despite having explored throughout the cosmos, my people have found no alien species, nor any signs that such species ever existed. Yet somebody made the black pill. If we understood that power, maybe we could use it to save reality from its inevitable decay.

By sending this message back, I destroy my entire timeline. I do this in the hopes that you, in the carefree springtime of the universe, will be able to find the person who made these pills and escape doom in the way we could not.

Yours truly,

You From Almost A Quadrillion Years In The Future

## Act Two

### Red

You hit the punching bag. It bursts, sending punching-bag-filling spraying all over the room! You know that that would happen! It always happens when you hit a punching bag! Your wife gets really angry and tells you that we don't have enough money to be getting new punching bags all the time, but women hate it when you listen to what they say! The Internet told you that!

The doorbell rings. You tear the door off its hinges instead of opening it, just to show it who's boss. Standing on your porch is a man in black. He wears a black cloak, and his face is hidden by a black hood. He raises a weapon towards you.

This looks like one of the approximately 100% of problems that can be solved by BRUTE STRENGTH! You lunge at the man, but despite your super-speed, he steps out of the way easily, even gracefully, as if he had known you

were going to do that all along. He squeezes the trigger. You jump out of the way, but it turns out to be more *into* the way, as he has shot exactly where you were jumping into. Something seems very odd about this. Your last conscious thought is that you wish you had enough BRUTE STRENGTH to figure out what is going on.

### Pink

You come home from work to a living room full of punching-bag-parts. Your husband isn't home. You figure he knew you were going to chew him out for destroying another punching bag, and decided to make himself scarce. That lasts right up until you go into the kitchen and see a man dressed all in black, sitting at the table, as if he was expecting you.

You panic, then reach in to touch him. If he's an axe murderer or something, you'll seduce him, get him wrapped around your little finger, then order him to jump off a cliff to prove his love for you. It's nothing you haven't done before, though you don't like to think about it too much.

Except that this man has no bare skin anywhere. His robe covers his entire body, and even his hands are gloved. You try to reach in to touch his face, but he effortlessly maneuvers away from you.

"I have your husband," he says, after you give up trying to enslave him with your magic. "He's alive and in a safe place."

"You're lying!" you answer. "He never would have surrendered to anyone! He's too alpha!"

The man nods. "I shot him with an elephant tranquilizer. He's locked up in a titanium cell underneath fifty feet of water. There's no way he can escape using BRUTE STRENGTH. If you ever want to see him again, you'll have to do what I say."

"Why? Why are you doing this to me?" you say, crying.

"I need the allegiance of some very special people," he said. "They won't listen to me just because I ask them to. But they might listen to me because *you* ask them to. I understand you are pretty special yourself. Help me get who I want, and when we are done here, I'll let you and your husband go."

There is ice in his voice. You shiver.

### Grey

That night with the assassin was really scary. You swore you would never get involved in King William's business again. Why are you even considering this?

“Please?” she said, with her big puppy dog eyes.

Oh, right. Her. She’s not even all that pretty. Well, pretty, but not *pretty* pretty. But somehow, when she touched you, it was like those movies where you hear a choir of angels singing in the background. You would do anything she said. You know you would.

“We need to know the layout of his palace compound,” said the man in black. Was he with her? Were they dating? If they were dating, you’ll kill him. It doesn’t matter how creepy he is, you won’t tolerate competition. But they’re probably not dating. You notice how he flinches away from her, like he’s afraid she might touch him.

“And it has to be me who helps?”

“I’ve, ah, simulated hundreds of different ways of getting access to the King. None of them hold much promise. His security is impeccable. Your special abilities are the only thing that can help us.”

You sit down at your terminal. The Internet is slow; DC still doesn’t have fiber optic. You’ve living here two years now, in a sort of retirement, ever since King William took over Russia and knocked the bottom out of the Putin-annoying business. William now controls the entire Old World, you hear, and is also Secretary-General of the United Nations and Pope of both the Catholic and the Coptic Churches. The United States is supposedly in a friendly coexistence with him, but you hear his supporters are gaining more and more power in Congress.

It only takes a few minutes’ work before you have the documents you need. “He currently spends most of his time at the Rome compound,” you say. “There are five different security systems. I can disable four of them. The last one is a complicated combination of electrical and mechanical that’s not hooked into any computer system I’ll be able to access. The only way to turn it off is from the control center, and the control center is on the *inside* of the perimeter.”

The man in black nods, as if he’d been expecting that. “Come with me,” he says. “We’ll take care of it.”

## Blue

There are a hundred billion stars in the Milky Way. Each has an average of about one planet — some have many more, but a lot don’t have planets at all.

If you can explore one planet every half-hour — and you can, it doesn’t take too long to teleport to a planet, look around to see if there are plants and animals, and then move on to the next one — it would take you five million years to rule out life on every planet in the galaxy.

That's not practical. But, you think, life might spread. Life that originates on one planet might end up colonizing nearby planets and star systems. That means your best bet is to sample various regions of the galaxy, instead of going star by star.

That's what you've been doing. You must have seen about a hundred thousand planets so far. Some of them have beggared your imagination. Whole worlds made entirely of amethyst. Planets with dozens of colorful moons that make the night sky look like a tree full of Christmas ornaments. Planets with black inky oceans or green copper mountains.

But no life. No life anywhere.

A few years ago, you felt yourself losing touch with your humanity. You made yourself promise that every year, you'd spend a week on Earth to remind yourself of the only world you've ever seen with a population. Now it seems like an unpleasant task, an annoying imposition. But then, that was why you made yourself promise. Because you knew that future-you wouldn't do it unless they had to.

You teleport into a small Welsh hamlet. You've been away from other people so long, you might as well start small. No point going right into Times Square.

A person is standing right next to you. She reaches out her arm and touches you. You jump. How did she know you would —

"Hi," she says.

You're not a lesbian, but you can't help noticing she is the most beautiful person you've ever seen, and you would do anything for her.

"I need your help." A man dressed all in black is standing next to her.

"You should help him," the most beautiful person you've ever seen tells you, and you immediately know you will do whatever he asks.

## Orange

You are in your study working on a draft version of next year's superweapon budget when you hear the door open. Four people you don't recognize step into the room. A man dressed in black. Another man wearing a grey shirt, thick glasses and is that a *pocket protector*? A woman in pink, pretty but not *pretty* pretty. Another woman in blue, whose stares through you, like her mind is somewhere else. All five of your security systems have been totally silent.

You press the button to call your bodyguards, but it's not working. So you draw the gun out from under your desk and fire; you happen to be a master



marksman, but the gun explodes in your face. You make a connection. A person from many years ago, who had the power to control all technology.

No time to think now. You're on your feet; good thing you happen to be a black belt in every form of martial arts ever invented. The man in grey is trying to take out a weapon; you kick him in the gut before he can get it out, and he crumples over. You go for the woman in blue, but at the last second she teleports to the other side of the room. This *isn't fair*.

You are about to go after the woman in pink, but something in her step, something in the position of the others makes you think they *want* you to attack her. You happen to be a master at reading microexpressions, so this is clear as day to you; you go after the man in black instead. He deftly sidesteps each of your attacks, almost as if he knows what you are going to do before you do it.

The woman in blue teleports behind you and kicks you in the back, hard. You fall over, and the woman in pink grabs your hand.

She is very, very beautiful. How did you miss that before? You feel a gush of horror that you almost punched such a beautiful face.

"We need your help," she says.

You are too lovestruck to say anything.

"The pills," said the man in black. "Can you make them?"

"No," you say, truthfully. "Of course I tried. But I wouldn't even know where to begin creating magic like that."

"And you've mastered all human jobs and activities," said the man in black. "Which means the pills weren't created by any human."

"But there aren't any aliens," said the woman in blue. "Not in this galaxy, at least. I've spent years looking. It's totally dead."

"It's just as I thought," said the man in black. He turns to you. "You're the Pope now, right? Come with us. We're going to need you to get a guy in northern Italy to give us something very important."

## Yellow

It is spring, now. Your favorite time in the forest. The snow has melted, the wildflowers have started to bloom, and the bears are coming out of hibernation. You're walking down to the river when someone leaps out from behind a tree and touches you. You scream, then suddenly notice how beautiful she is.

Four other people shuffle out from behind the trees. You think one of them might be King William, the new world emperor, although that doesn't really make sense.

“You’re probably wondering why I’ve called all of you together today...” said the man in black. You’re not actually wondering that, at least not in quite those terms, but the woman in pink seems to be listening intently so you do the same in the hopes of impressing her.

“Somehow — and none of us can remember exactly how — each of us took a pill that gave us special powers. Mine was to see the future. I saw to the end of time, and received a message from the last people in the universe. They charged me with the task of finding the people who created these pills and asking them how entropy might be reversed.

But I couldn’t do it alone. I knew there were seven other people who had taken pills. One of us — Green — is dead. Another — Red — had nothing to contribute. The rest of us are here. With the help of Pink, Blue, and Gray, we’ve enlisted the help of Orange and his worldwide organization. Now we’re ready for the final stage of the plan. Yellow, you can read anybody’s mind from a picture, right?”

Yellow nods. “But it has to be a real photograph. I can’t just draw a stick figure and say it’s the President and read his mind. I tried that.”

Black is unfazed. “With the help of Orange, who among his many other accomplishments is the current Pope, I have obtained the Shroud of Turin. A perfect photographic representation of Jesus Christ, created by some unknown technology in the first century. And Jesus, I am told, is an incarnation of God.”

“As the current Pope, I suppose I would have to agree with that assessment,” says Orange. “Though as the current UN Secretary General, I am disturbed by your fanatical religious literalism.”

“Orange can do anything that humans can do, and says he can’t make the pills. Blue has searched the whole galaxy, and says there aren’t any aliens. That leaves only one suspect. God must have made these pills, which means He must know how to do it. If we can read His mind, we can steal his secrets.”

“As Pope,” says Orange, “I have to condemn this in the strongest possible terms. But as Lucasian Professor of Mathematics at Cambridge, I have to admit I’m intrigued by this opportunity to expand our knowledge.”

Black ignores him. “Yellow, will you do the honors?”

You want no part in this. “This is insane. Every time I read someone’s mind I regret it. Even if it’s a little kid or a bear or something. It’s too much for me. I can’t deal with all of their guilt and sorrow and broken dreams and everything. There is *no way* I am touching the mind of God Himself.”

“Pleeeeeease?” asks Pink, with big puppy dog eyes.

“Um,” you say.

“Don’t you know how this will go, anyway?” asks Blue. “Why don’t you just tell her what happens?”

“Um,” said Black. “This is actually the one thing I haven’t been able to see. I guess contact with God is inherently unpredictable, or something.”

“I have *such* a bad feeling about this,” you say.

“Pweeeeeeease?” says Pink. She actually says pweeeeeeease.

You sigh, take the shroud, and stare into the eyes of Weird Photographic Negative Jesus.

## Black

It is the year 963,445,028,777,216 AD, and here you are in a space station orbiting the Galactic Core.

After handing Yellow the Shroud of Turin, the next thing you remember is waking up in a hospital bed. The doctor tells you that you’d been in a coma for the past forty one years.

Apparently Yellow went totally berserk after reading God’s mind. You don’t know the details and you don’t want to, but she immediately lashed out and used her superpowers to turn off the minds of everybody within radius, including both you and herself. You all went comatose, and probably would have starved to death in the middle of the forest if Orange’s supporters hadn’t launched a worldwide manhunt for him. They took his body and the bodies of his friends back to Rome, where they were given the best possible medical care while a steward ruled over his empire.

After forty-one years of that, Yellow had a heart attack and died, breaking the spell and freeing the rest of you. Except Blue and Grey. They’d died as well. It was just you, Orange, and Pink now.

Oh, and Red. You’d hired a friend to watch over him in his titanium jail cell, and once it became clear you were never coming back, he’d had mercy and released the guy. Red had since made a meager living selling the world’s worst body-building videos, which were so bad they had gained a sort of ironic popularity. You tracked him down, and when Pink saw him for the first time in over forty years, she ran and embraced him. He hugged her back. It took them a few hours of fawning over each other before she realized that nothing had happened when she touched him a second time. Something something true love something the power was within you the whole time?

But you had bigger fish to fry. The stewards of Orange’s empire weren’t too happy about their figurehead monarch suddenly rising from the dead, and for a while his position was precarious. He asked you to be his advisor, and

you accepted. With your help, he was able to retake his throne. His first act was to fund research into the immortality serum you had heard about, which was discovered right on schedule in 2060.

The years went by. Orange's empire started colonizing new worlds, then new galaxies, until thousands of years later it changed its name to the Virgo Superconfederation. New people were born. New technologies were invented. New frontiers were conquered. Until finally, the stars started going out one by one.

Faced with the impending heat death, Orange elected to concentrate all his remaining resources here, on a single station in the center of the galaxy, which would wait out the final doom as long as possible. For billions of years, it burned through its fuel stockpile, until the final doom crept closer and closer.

And then a miracle occurred.

## Epilogue

### Red

This space station is AWESOME! There are lasers and holodecks and lots of HOT PUSSY! And all you have to do is turn a giant turbine for a couple of hours a day.

One of the eggheads in white coats tried to explain it to you once. He said that your BRUTE STRENGTH was some kind of scientific impossibility, because you didn't eat or drink any more than anyone else, and you didn't breathe in any more oxygen than anyone else, and you were actually kind of small and scrawny, but you were still strong enough and fast enough to turn a giant turbine thousands of times per minute.

He rambled on and on about thermodynamics. Said that every other process in the universe used at most as much energy as you put into it, but that your strength seemed almost limitless regardless of how much energy you took in as food. That made you special, somehow. It made you a "novel power source" that could operate "independently of external negentropy". You weren't sure what any of that meant, and honestly the scientist seemed sort of like a BETA CUCKOLD ORBITER to you. But whatever was going on, they'd promised you that if you turned this turbine every day, you could have all the HOT PUSSY you wanted and be SUPER ALPHA.

You'd even met the head honcho once, a guy named King William. He told you that some of the energy you produced was going to power the station, but

that the rest was going into storage. That over billions and billions of years, they would accumulate more and more stored negentropy, until it was enough to restart the universe. That it would be a cycle — a newborn universe lasting a few billion years, collapsing into a dark period when new negentropy had to be accumulated, followed by another universe again.

It all sounded way above your head. But one thing stuck with you. As he was leaving, the King remarked that it was ironic that when the black hole harvesters and wormholes and tachyon capacitors had all failed, it was a random really strong guy who had saved them.

You had always known, deep down, that BRUTE STRENGTH was what was really important. And here, at the end of all things, it is deeply gratifying to finally be proven right.